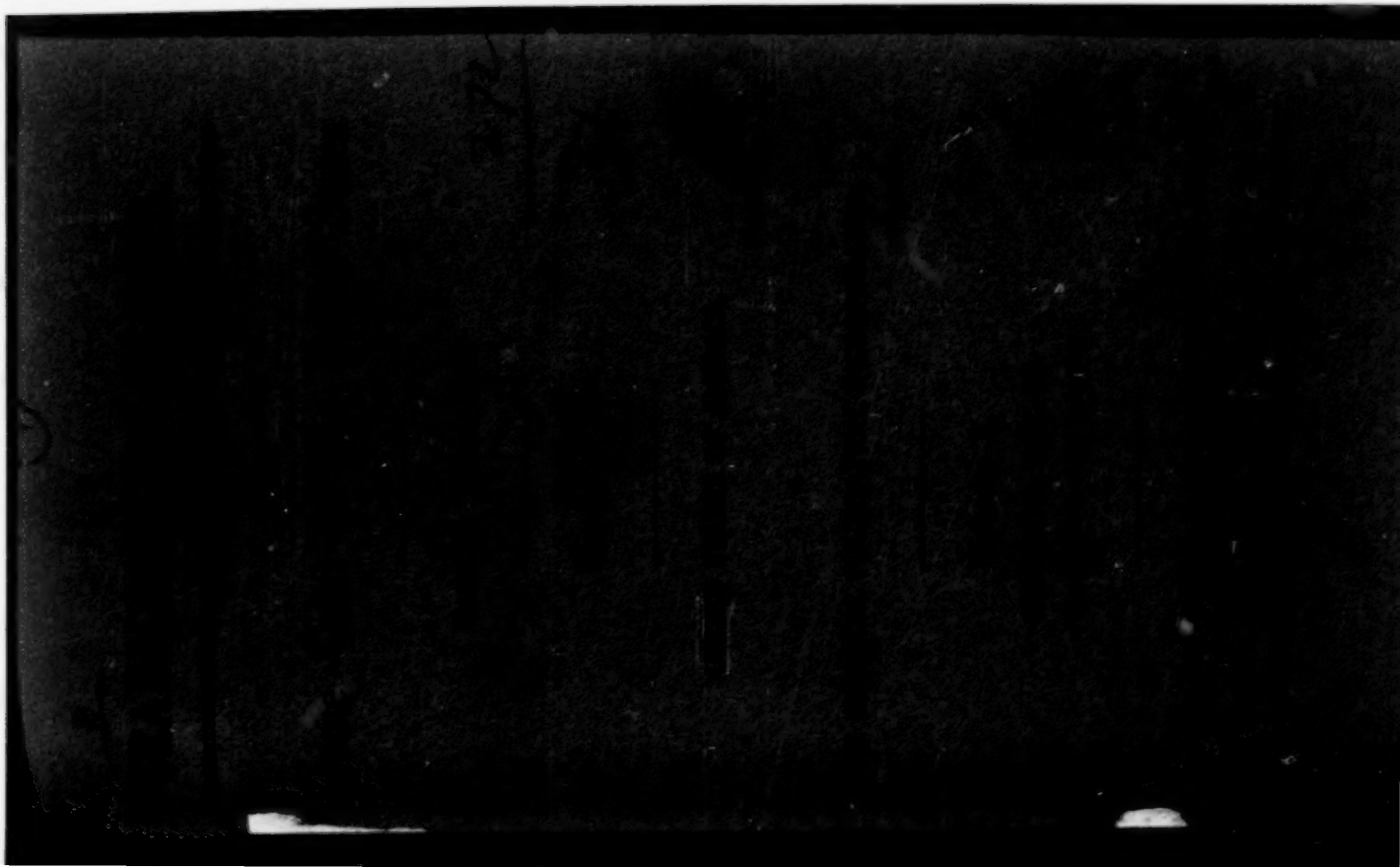


**PLAINTIFF'S EXHIBIT No. 612.**

TO BE SOLD

BY THE

ALIEN PROPERTY

CUSTODIAN

The Entire Capital Stock

of

THE BAYER COMPANY, Inc.

and

SYNTHETIC PATENTS CO., Inc.
RENSSELAER, N. Y.

and

Rights, Title and Interest in Certain Patents and Contracts Set Forth in Order of Sale.

A. MITCHELL PALMER,
*Alien Property Custodian.*

JOSEPH F. GUFFEY,
*Director, Bureau of Sales*

RALPH J. BAKER
*Counsel, Bureau of Sales*
110 West 42nd Street
New York City

150248

ORDER OF SALE

by

ALIEN PROPERTY CUSTODIAN

*of*

2,250 shares of Preferred Stock and 5,250 shares of Common Stock, constituting all of the capital stock of THE BAYER COMPANY, Inc., a corporation of the State of New York; and 500 shares, being all of the capital stock of SYNTHETIC PATENTS Co., Inc., a corporation of the State of New York; and all the right, title and interest, if any, heretofore held by Carl Duisberg, Christian Hess and Rudolph Mann, and each of them, under a certain alleged contract between them and Synthetic Patents Co., Inc.; and all the right, title and interest, if any, heretofore held by Farbenfabriken vormals Friedr. Bayer & Company, of Leverkusen, Germany, under an alleged contract supposed to have been entered into with the Bayer Company, Inc.; and all the right, title and interest, if any, heretofore held by Farbenfabriken vormals Friedr. Bayer & Company, Vereinigte Chininfabriken Zimmer & Co., G.m.b.H., the Firm of E. Merck, Emil Aberhalden and Richard Willstätter, in and to certain patents and patent rights.

I, A. MITCHELL PALMER, Alien Property Custodian, duly appointed, qualified and acting under the provisions of the Act of Congress known as the "Trading with the enemy Act," as amended, and the proclamations and Executive orders issued in pursuance thereof, do hereby order that the Director of the Bureau of Sales of the Alien Property Custodian, hereinafter referred to as "Director of Sales," offer for sale to the highest bidder, at public sale, after public advertisement of the time and place of sale, upon

the terms and conditions hereinafter set forth, at the front door of the main office of The Bayer Company, Inc., a New York corporation, on Riverside Avenue, Rensselaer, New York, at 3 o'clock P. M., on Tuesday, December 3rd, 1918, the following:

(a) Two Thousand Two Hundred and Fifty (2,250) shares, amounting in par value to Two Hundred and Twenty-five Thousand ($225,000) Dollars of Preferred Stock, and Five Thousand Two Hundred and fifty (5,250) shares, amounting in par value to Five Hundred and Twenty-five Thousand ($525,000) Dollars, of Common Stock, constituting all of the capital stock of The Bayer Company, Inc., a corporation of the State of New York. The preferred stock is entitled to a preferential cumulative dividend of eight per cent. (8%) per year.

(b) Five Hundred (500) shares, amounting in par value to Fifty Thousand ($50,000) Dollars, of the capital stock of Synthetic Patents Co., Inc., a corporation of the State of New York, constituting all of the capital stock of said corporation.

(c) All the right, title and interest, if any, heretofore held by Carl Duisberg, Christain Hess and Rudolph Mann and each of them, in, to and under an alleged contract supposed to have been entered into between Synthetic Patents Co., Inc., a corporation of the State of New York, and the said Carl Duisberg, Christian Hess and Rudolph Mann, dated June 12, 1913, whereby a sum equal to a certain proportion of the earnings of the said Synthetic Patents Co., Inc., for the right to use certain patents, formulas, processes, trade-marks and trade names of said Synthetic Patents Co., Inc., are supposed to be paid annually to

the said Carl Duisberg, Christian Hess and Rudolph Mann, and in and to all rights to any future share of the receipts, income or profits of Synthetic Patents Co., Inc., and all future claims whatsoever against Synthetic Patents Co., Inc., all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be transferred, assigned, delivered and paid over to him.

(d) All the right, title and interest, if any, heretofore held by Farbenfabriken vormals Friedr. Bayer & Company, of Leverkusen, Germany, a German corporation in, to and under an alleged contract supposed to have been entered into between The Bayer Company, Inc., a corporation of the State of New York, and the said Farbenfabriken vormals Friedr. Bayer & Company, of Leverkusen, Germany, dated June 12, 1913, whereby, in return for the granting to The Bayer Company, Inc., by said Farbenfabriken vormals Friedr. Bayer & Company of certain and exclusive rights for the sale of dyes, drugs and pharmaceuticals, The Bayer Company, Inc., is supposed under such alleged contract to pay to said Farbenfabriken vormals Friedr. Bayer & Company, of Leverkusen, Germany, a certain portion of the net profits realized by the Bayer Company, Inc., from the sale of the products which are the subject of the granting of the exclusive right under the alleged contract, and in and to all right to future compensation by reason of the ownership or enjoyment by The Bayer Company, Inc., of the rights and licenses purported to be granted to The Bayer Company, Inc., by said alleged agreement, all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be transferred, assigned, delivered and paid over to him.

(e) All the right, title and interest, if any, heretofore held by Farbenfabriken vormals Friedr. Bayer & Company, of Leverkusen, Germany, a German corporation, in, to and under those certain letters patent of the United States, specified in Schedule "A," hereto annexed, issued to said Farbenfabriken vormals Friedr. Bayer & Company, Leverkusen, Germany, all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be conveyed, transferred, assigned and delivered to him.

(f) All the right, title and interest, if any, heretofore held by Vereinigte Chininfabriken Zimmer & Co., G.m.b.H., of Frankfort-on-the-Main, Germany, in, to, and under those certain letters patent of the United States, specified in Schedule "B," hereto annexed, issued to said Vereinigte Chininfabriken Zimmer & Co., G.m.b.H., of Frankfort-on-the-Main, Germany, all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be conveyed, transferred, assigned and delivered to him.

(g) All the right, title and interest, if any, heretofore held by the Firm of E. Merck, of Darmstadt, Germany, in, to and under those certain letters patent of the United States, specified in Schedule "C," hereto annexed, issued to said Firm of E. Merck, of Darmstadt, Germany, and in and to the registered trademark "Veronal," registered April 14, 1903, under Number 40,115, all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be conveyed, transferred, assigned and delivered to him.

(h) All the right, title and interest, if any, heretofore held by Emil Aberhalden, of Halle-on-the-Salle,

Germany, in, to and under those certain letters patent of the United States, specified in Schedule "D," hereto annexed, issued to said Emil Aberhalden, of Halle-on-the-Salle, Germany, all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be conveyed, transferred, assigned and delivered to him.

(i) All the right, title and interest, if any, heretofore held by Richard Willstätter, of Berlin, Germany, in, to and under those certain letters patent of the United States, specified in Schedule "E," hereto annexed, issued to said Richard Willstätter, of Berlin, Germany, all of which right, title and interest, if any, has been heretofore required by the Alien Property Custodian to be conveyed, transferred, assigned and delivered to him.

TERMS AND CONDITIONS OF SALE

1. Said parcels of property above specified will be offered for sale in one block, and as an entirety, and the bids therefor will be a single sum.

2. Said sale may be adjourned from time to time by announcement at the time and place appointed for such sale or such adjourned sale or sales, and without further notice or publication may be held on any day to which the same may have been adjourned.

3. No bid will be received unless the person offering to bid shall have deposited with the Alien Property Custodian or with Joseph F. Guffey, Director, Bureau of Sales, 110 West 42nd Street, New York City, as a pledge that he will make good his bid in case of its acceptance, a check for the sum of $100,000, certified by some bank or trust company and payable to the order of said Director, and shall have furnished

an address to which notices hereinafter provided for may be sent. Deposits from unsuccessful bidders will be returned at the close of the bidding or as soon thereafter as practicable.

4. Such property will be sold only to an American citizen or citizens, or to a corporation incorporated within and under the authority of the laws of a state or territory of the United States or of any of its insular possessions; but the Alien Property Custodian shall have the right to exclude from bidding at any such sale, and/or from purchasing or otherwise acquiring the above described property, any corporation which he shall, after investigation, determine to be controlled, managed or operated, wholly or mainly, by or for the account or benefit of a person or persons not a citizen or citizens of the United States or of its insular possessions. The Alien Property Custodian or said Director of Bureau of Sales shall have the right to require, either before or after any bidding or acceptance of any bid, evidence that the bidder is qualified, as above provided, to bid for and purchase said property.

5. The right is reserved to announce at the opening of said sale or at any time prior thereto an upset or minimum price for the property to be sold.

6. After all bids have been made, the Alien Property Custodian, his representative, or the auctioneer conducting the sale, shall declare the bidding to be closed, and the bid of the highest bidder qualified to bid for and purchase the said property shall be subject to acceptance by the Alien Property Custodian within thirty (30) days, during which time or any extension thereof that may be agreed to by the highest qualified bidder, the Alien Property Custodian, upon order of the President, stating the reasons therefor,

shall have the right to reject all bids for said property. In the event of the acceptance of such highest bid, notice thereof shall be given within said thirty (30) days or any extension thereof, as above provided, by depositing such notice in a post office or post office box addressed to said bidder at the address furnished by him. In the event the bid of said highest bidder shall not be accepted, the deposit made by him will be returned, and such return may be made by depositing check for same in a post office or post office box addressed to such bidder at the address furnished by him.

7. In case the bidder whose bid shall be accepted and who shall be declared the purchaser of said property shall fail to make good his bid, the sum or sums paid by him as a deposit prior to bidding, as above provided, and any payments in addition thereto upon the purchase money as hereinafter provided for, shall be applied toward payment of the expenses of a re-sale or re-sales and toward making good any deficiency or loss upon such re-sale or re-sales.

8. Upon acceptance of the bid of the highest bidder, as above provided, twenty-five (25%) per cent. of the purchase price shall be paid in cash to the Alien Property Custodian; another twenty-five (25%) per cent. of the purchase price shall be paid in cash to the Alien Property Custodian within thirty (30) days from the acceptance of such bid; another twenty-five (25%) per cent. of the purchase price shall be paid in cash to the Alien Property Custodian within sixty (60) days from the acceptance of such bid; and the balance of the purchase price shall be paid to the Alien Property Custodian within ninety (90) days from the acceptance of such bid; and upon payment of the purchase price in full, within said dates as

above, the property purchased will be transferred and delivered to the purchaser. The amount deposited prior to bidding shall be credited upon and deducted from the first twenty-five (25%) per cent. of the purchase price to be paid as above provided. Deferred payments shall bear interest at the rate of six (6%) per cent. per annum from date of acceptance of the bid as above provided.

9. Further information concerning the property to be sold and concerning The Bayer Company, Inc., and Synthetic Patents Co., Inc., and the alleged contract and patent rights, if any, may be had by application to said Joseph F. Guffey, Director of Sales, Alien Property Custodian, 110 West 42nd Street, Manhattan Borough, New York City, to whom applications or requests for such information, and for inspection of the property should be made. No inspection of the plant of The Bayer Company, Inc., or its subsidiary, the Williams and Crowell Color Company, will be allowed except upon written order from said Director of Sales, to be given only to those (a) who have qualified as bidders, or (b) who shall have deposited with said Director of Sales a certified check for $50,000., said check to be applied toward qualifying said person as a bidder, in the event such person shall so qualify; otherwise, to be returned as soon as practicable after the sale.

10. All checks deposited as a qualification for bidding, or for the purpose of securing the right of inspection, or as payment of or upon the purchase price for property sold, shall be made payable to "Joseph F. Guffey, Director of Sales," and must be certified by some bank or trust company acceptable to the Alien Property Custodian or to said Director of Sales.

11. Neither the United States nor the Alien Property Custodian nor any representative or agent or agency shall be held or admitted to make any representation or guaranty, express or implied, concerning or in any way respecting such property or business or any information concerning the same.

12. Said sale will be made by the Alien Property Custodian by virtue of, and subject to, the provisions of the Act of Congress known as the "Trading with the Enemy Act," as amended, and the proclamations and Executive orders issued in pursuance thereof, copies of which may be obtained by application to Joseph F. Guffey, Director of Sales, Alien Property Custodian, 110 West 42nd Street, New York City, or to the Alien Property Custodian, Washington, D. C.

A. MITCHELL PALMER,
*Alien Property Custodian.*

(Copies of Schedules A, B, C, D and E, attached to the original order and terms of sale may be examined at the office of the Director, Bureau of Sales, 110 West 42nd Street, New York City.)

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## THE BAYER COMPANY

### History

About the year 1878 the firm of Friedrich Bayer & Company of Leverkusen, Germany, manufacturer of dye stuffs, commenced the sale of its products in the United States, through Preiss & Rumpf, a New York selling agency, and later through Ernst Sehlbach & Co., also of New York.

About that time several American manufacturers were attempting to produce aniline dyes, among them the Hudson River Aniline Color Works, a New York

corporation, which had established a factory in Rensselaer, N. Y. Later this corporation employed Sehlbach & Co. as its sole selling agent, the latter firm acquiring a one-fourth interest in its stock. It was agreed at that time that the Hudson River Company should be limited to the manufacture of such dyes as could not be profitably imported from Germany.

In 1895 the firm of Ernst Sehlbach & Co. was dissolved and Farbenfabriken of Elberfeld Co., a New York corporation, was organized to conduct the sales agencies for both German and American concerns.

The limitation upon the product of the American Company led to the formation of the American Color & Chemical Company by Louis Waldman, President of the Hudson River Company. The American company built a factory in Albany and specialized so successfully in the manufacture of aniline dyes, especially blacks, that the Farbenfabriken vormals Friedrich Bayer & Co., the corporate successor of the firm of Friedrich Bayer & Co., bought up all the stock of both American companies dismantling the Albany plant and transferring its equipment and supplies to the Rensselaer factory.

This transfer of ownership marked the commencement of the manufacture of pharmaceutical goods at the Rensselaer plant, of which Aspirin became one of the principal products.

The Farbenfabriken of Elberfeld Co. of New York continued to sell products imported from Germany and the products of the Rensselaer plant until 1913, when the American business was reorganized by the incorporation under the laws of the State of New York on June 12, 1913, of The Bayer Company, Inc., and about the same date, of Synthetic Patents Company, Inc.

The real estate of the Rensselaer plant and all

United States patents owned by the Farbenfabriken of Elberfeld Company of New York were transferred to Synthetic Patents Co., Inc. The German concern executed to Synthetic Patents Co., Inc., a blanket assignment of many U. S. patents standing in its name. Equipment, machinery, supplies, manufactured goods, trade marks and sales rights were transferred to the Bayer Company, which also took from Synthetic Patents Company, Inc., a lease of the real estate upon which the plant was located and a license to manufacture under the patents owned by that Company.

The Farbenfabriken of Elberfeld Company was thereupon dissolved and the capital of the Hudson River Aniline Color Works reduced to $820.

The Bayer Company thereafter assumed control of production and sales, Synthetic Patents Co., Inc., being merely a holding company for real estate and patents.

The Bayer Company was incorporated with an authorized capital stock of $750,000, consisting of 2,250 shares of 8 per cent. cumulative preferred stock, and 5,250 shares of common stock, of the par value of $100 each, all of which is now outstanding.

The Synthetic Patents Company, Inc., was incorporated with an authorized capital stock of $50,000, consisting of 500 shares of the par value of $100 each, all of which is now outstanding.

On January 15, 1918, the entire outstanding stock of both companies stood in the name of H. C. A. Seebohm, who held it for Carl Duisberg, Christian Hess and Rudolph Mann, stockholders of the German corporation Farbenfabriken vormals Friedrich Bayer & Co. On that date all of the stock was seized by and transferred to A. Mitchell Palmer, Alien Property Custodian.

About two yeas before control was assumed by the Alien Property Custodian there had been organized

in Providence for the manufacture of sulphur dyes, a Rhode Island corporation, called Williams & Crowell Company. Early in 1918 a New York Corporation of the same name, with a capital stock of $100,000, was formed by interests identified with The Bayer Company, which acquired the properties of the Rhode Island concern. The stock of the New York corporation has since been acquired by The Bayer Company and will pass to the purchaser at this sale, as an asset of The Bayer Company.

### Plant and Realty

The plant of The Bayer Company is located at Rensselaer, New York, which is on the east side of the Hudson River, opposite Albany, the capital of New York State. It is on the main line of the New York Central Railroad, the distance from New York City being 142 miles.

The Company owns approximately 75 acres of land. On the west the property fronts on the Hudson River and on the east it adjoins the New York Central Railroad right-of-way. The distance from the eastern to the western boundary is about 1,700 feet.

The railroad shipping and receiving facilities are ample for the Company's requirements. There is a spur connection direct to the main line of the New York Central Railroad. The total lineal feet of track within the property limits is approximately 3,900.

There are 20 buildings in the manufacturing group. In general the buildings are of single story, mill type construction, concrete foundations and floors, brick walls and steel trusses. The floor area utilized by the different departments is as follows:

| | | |
|---|---|---|
| Pharmaceutical Department | 57,138 | Sq. Ft. |
| Dyestuff Department | 201,588 | " " |
| Power & Maintenance Department | 29,737 | " " |
| Total | 288,463 | " " |

In addition to the manufacturing group, there are six dwellings located on the property.

The equipment in the Pharmaceutical Department is mostly of special design. It is used chiefly in the manufacture of Aspirin, although the Company also makes a small amount of miscellaneous drugs.

In addition to the equipment used directy in making dyestuffs, the Company has special apparatus for manufacturing raw and intermediate materials, as follows:

Nitric Acid Plant, daily capacity 6,000 pounds.
Sulphuric Acid Concentration Plant, daily capacity 12,000 pounds.
Nitrite Plant.
Hydrochloric Acid Plant.
Apparatus for making Nitrobenzol, Dinitrochlorbenzol and Dinitrotoluol.
Apparatus for making Aniline Oil.
Apparatus for making Amido Oil.

Power for operating the equipment is transmitted from motor driven shafting by means of belt drive. High tension electric current for power and lighting is purchased from the Albany Southern Railroad at 2.46c. per k. w. hour. The current is stepped down to 220 volts for commercial use.

Steam for power, heating and manufacturing purposes is generated in a new modern boiler plant of 2,000 H. P. capacity. The equipment consists of two batteries of 500 H. P. Stirling boilers, together with auxiliary apparatus. The boilers are built for 150 pounds steam pressure.

Water for the boiler plant, manufacturing purposes and fire protection is supplied from the Company's filtration plant, located near the water front. The plant has a daily capacity of 3,000,000 gallons.

The machine and carpenter shops are of ample size and well equipped to take care of the general repairs.

The plant as a whole is well laid out and to facilitate the transportation of raw material and finished product from one location to another the Company has installed an industrial railway system which connects all the buildings.

PLANT AND REALTY—WILLIAMS & CROWELL COLOR CO.

The offices of the Company are located on the second floor of the Hanley Building, 56 Pine Street, Providence, R. I., a portion of the floor space being utilized for a laboratory.

The Company has a color mixing department in the basement of the Electric Building, No. 99 Stewart Street, Providence, R. I., and owns the furniture, fixtures and equipment at both of these locations.

The Company owns and operates a plant at Packerville, Conn. This property consists of approximately 400 acres of land, a portion of which is a wooded tract.

The manufacturing building is a two-story (with basement) stone building of slow-burning construction type, erected in 1832. The building used for fusion kettles was built in 1917 and is a one-story brick structure.

In addition to the manufacturing buildings, the Company owns several workmen's dwellings and a three-story residence, known as the "Packer Mansion." There are also numerous miscellaneous structures, *i. e.*, Stores, Stable, Garage and Sheds. All of the latter buildings are of frame construction and are mostly in poor condition, the main manufacturing building being well constructed and shows evidence of having had renewals and additions at various times to keep it in a fairly good condition.

Shipping facilities are provided by rail on a spur track of the N. Y., N. H. & H. R. R. at Packerville, this track being located about one-quarter of a mile distant from the plant.

The Company owns water rights controlling two dams, each approximately 63 feet wide, with a 15-foot head of water.

Packerville is situated about two miles distant from Plainfield, Conn., and 42 miles from Providence. Auto trucks are utilized at present for receiving and shipping over the road.

Very little of the equipment installed in this plant was new at the time of installation, but it is serving the requirements of the Company in a fairly efficient manner.

A water turbine installed in the basement of the building develops about 35 horse-power and is in use at the present time. A steam engine is provided, of equal horse-power, in case of a breakdown.

### Patents and Trade Marks

(a) At the time of the reorganization in 1913, a large number of United States patents for dyes and pharmaceuticals was held by the Farbenfabriken of Elberfeld Company of New York in trust for the German Company, Farbenfabriken vormals Friedrich Bayer & Co. Under date of June 12, 1913, blanket conveyances of all such patents were executed by both concerns to Synthetic Patents Company, and instruments specifically identifying the patents so assigned were recorded in the Patent Office November 4, 1913. Title to all these patents and also to patents since June 12, 1913, issued to Synthetic Patents Company is reported to be definitely established in that company.

(b) A still larger number of patents stood in the name of the German company itself. A blanket

assignment of such patents to Synthetic Patents Company dated 1913 was recorded in the United States Patent Office in 1918—after a lapse of five years. Legal doubts as to the effectiveness of this assignment have led to the seizure by the Alien Property Custodian of all right, title and interest, of any, of the German company therein. He has also seized patents issued to the German company subsequent to 1913, which by contract were to be available to the American company, and for which no assignment has been discovered, and certain additional patents supposed to be controlled by Synthetic Patents Company, but found still of record in several enemy concerns and individuals, namely: Vereinigte Chininfabriken Zimmer & Co., G. M. B. H. of Frankfort-on-the-Main, E. Merk of Darmstatt, Emil Aberhalden of Halle-on-the-Salle and Richard Willstätter of Berlin. All of the patent rights mentioned in this paragraph will be offered for sale with the stocks of the Bayer Company and Synthetic Patents Company.

The patents are very numerous. The lists may be examined in the office of the Director of the Bureau of Sales, together with the reports thereon prepared by Messrs. Emery, Booth, Janney & Varney.

Generally it may be said that the dyestuffs and pharmaceuticals now produced by The Bayer Company are not claimed to be produced under patented processes. The patent rights owned by the Synthetic Patents Company and those to be sold by the Alien Property Custodian, as above stated, are believed to include, however, all outstanding United States patents for dyestuffs and pharmaceuticals manufactured by the German company, Farbenfabriken vormals Friedrich Bayer & Co.

The trade marks and trade names under which many of the Bayer Company's pharmaceuticals are marketed were assigned to the Bayer Company by

Farbenfabriken of Elberfeld Co. of New York and Farbenfabriken vormals Friedrich Bayer & Co. of Leverkusen in 1913, and are reported to be legally vested in the Bayer Company. Some additional trade marks have since been registered by The Bayer Company.

The Bayer Company is reported to have some special methods of manufacture in the nature of secret processes not possessed by other American concerns, which are said to be of considerable utility and value.

PROFIT SHARING CONTRACTS

1. An agreement dated June 12, 1913, between Synthetic Patents Company and The Bayer Company, granting to The Bayer Company a blanket license to manufacture and sell products under the patents and processes controlled by Synthetic Patents Company, provided for the payment to the latter company by the Bayer Company of a proportion of its net profits from sales of such products to be agreed upon annually by the said companies, and in the absence of agreement, to be 75 per cent. This agreement is terminable on January 1, 1921.

2. An agreement dated June 12, 1913, between Synthetic Patents Company and Messrs. Carl Duisberg, Christian Hess and Rudolph Mann, acknowledging valuable consideration, provided for the payment to said individuals of a sum equal to 75 per cent. of the receipts of Synthetic Patents Company for the right to the use of its patents and processes. This agreement does not purport to be terminable.

3. An agreement dated June 12, 1913, between The Bayer Company and the German company, Farbenfabriken vormals Friedrich Bayer & Co., granting to the Bayer Company the exclusive right for the sale

within the United States and Canada of all products of the German company, provided for the payment to the German company of a sum equal to one-half of the net profits realized by The Bayer Company (a) from such sales and (b) by reason of its right to manufacture any products as to which the German company should have a proprietary interest; payments by The Bayer Company to Synthetic Patents Company under the first agreement mentioned, to be deducted from gross receipts before ascertainment of net profits. This agreement is terminable on January 1, 1921.

Signed copies of the foregoing agreements have not been discovered, and their validity has been doubted, but the division of profits in accordance therewith has been consistently made. During the period from June 12, 1913, to June 30, 1918, approximately 56 per cent of the combined earnings of The Bayer Company and Synthetic Patents Company were credited to the German interests, consisting of Farbenfabriken vormals Friedrich Bayer Co. and Messrs. Duisberg, Mann and Hess. The distribution for each year is shown in the auditors' report. The rights, if any, of Messrs. Duisberg, Mann and Hess, under the second contract above described, and of Farbenfabriken vormals Friedrich Bayer Company under the third contract above described, have been seized by the Alien Property Custodian and will be sold with the stock of The Bayer Company and Synthetic Patents Company, in order that the purchaser may acquire the undisputed right to all of the profits of the latter company.

PRODUCTS

The products of The Bayer Co. plant may be classified as follows:

(a) Dyes.
(b) Pharmaceutical Goods.
(c) Photographic Chemicals.

(A) Dyes

Prior to 1914 the Rensselaer plant had manufactured relatively small quantities of dyes, the German owners of The Bayer Company finding it more profitable to produce abroad such dyestuffs as were needed to meet American demands.

Before the war, the only colors manufactured by The Bayer Company were: Bismarck Brown, Nigrosin, Chrysodine and Induline. Since then the Rensselaer plant has manufactured the following dyes: Azo-fuchsines, Azo-crimson L, Azo-phlozine Ga, Diamond blue blacks, Anthracene dark brown, Alizarine yellow GG, Direct pink, Chrome yellow O, Naphtylamine blacks, Wool green BSA, Diamond fast purples, Acid chrome greens and sulphur black. At the present time the principal finished products and output of the Dye Department are as follows:

| | |
|---|---|
| Azo Colors | 225 lbs. per month. |
| Nigrosin | 50,000 lbs. per month. |
| Bismarck Brown | 6,000 lbs. per month. |
| Induline | 6,000 lbs. per month. |
| Sulphur Black | 20,000 lbs. per month. |

Colors manufactured by The Bayer Company are adapted not only for all branches of the textile trade, but also for leather, papers, lakes, paints, etc. Some of the more recent introductions were fast blacks and blues for wools, sulphur colors for cotton, and alizarine derivatives.

(B) Pharmaceutical Goods

Pharmaceutical goods manufactured and sold by The Bayer Company have been introduced solely to the medical profession, and have always been considered strictly ethical remedies, as evidenced by their acceptance by the Council of Pharmacy and Chemistry, of the American Medical Association. With the excep-

tion of Aspirin, none of them has ever been brought directly to the attention of the American public.

A few years after the introduction of Aspirin, which was sold only in powder form, a demand for tablets developed, and to meet this a number of manufacturers arranged with The Bayer Company to purchase Aspirin powder in bulk, from which were manufactured various brands of tablets. In 1915 The Bayer Company decided to place its own products in the market, and discontinued selling the powder to these manufacturers.

In July, 1916, an advertising campaign in behalf of Aspirin was inaugurated, in which the public was warned against substitutes and counterfeits, no claims being made for the efficacy of the article advertised. When the patent on acetyl-salicylic acid expired in February, 1917, a number of other firms began its manufacture, and placed a powder or tablet or both upon the market. Other firms also began to sell acetyl-salicylic acid under the name of Aspirin, as a result of which The Bayer Company has instituted suits for violation of trade mark rights.

Other products of the Pharmaceutical Department are: Phenacetin, Sulfonal, Trional, Aristol, Salophen, Protargol, Heroin, Sajodin, Veronal, Novaspirin, Adalin, Luminal and Elarson. About 50 other products are supplied by The Bayer Company, for some of which there is still a demand, although many of them cannot be supplied, because of the exhaustion of the present stock.

### (C) Photographic Chemicals

The Bayer Company manufactures the following preparations, used in the photographic trade: Acetone Sulphite—Bayer, a preservative for developing and fixing baths; Edinol and Edinol-Hydro, developers.

Product—Williams and Crowell Company.

The principal products of this plant are Sulphur Colors, yellows, browns and greens—made entirely for cotton goods. The average monthly capacity is approximately 250,000 pounds.

### Sales Agencies

The products of The Bayer Company are marketed through branch offices and agencies located in New York, Boston, Chicago, Providence, R. I., Philadelphia and San Francisco. All premises so occupied are leased, copies of leases being on file at the office of the Director, Bureau of Sales.

In addition agencies are maintained in the following countries: Argentine, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Curacoa, Ecuador, Guatemala, Honduras, Java, Mexico, Nicaragua, Peru, Porto Rico, San Salvador, Panama, Venezuela and in the Philippine Islands.

The main office of The Bayer Company is at 117 Hudson Street, New York City. Stocks of merchandise are held by each branch and the branch offices also collect all accounts receivable arising from goods sold in their territories. Remittances are made to the New York office.

The Bayer Company markets almost all of its color and dye products by contract with concerns engaged in the textile, dyeing, and leather industry and with manufacturers of shoe polish.

The pharmaceutical products are sold to wholesale druggists and chemists.

### Contract With Heyden Chemical Works

Under an agreement dated December 12, 1916, The Bayer Company obligated itself to supply the Heyden Chemical Works, of Garfield, N. J., at cost, with acetyl-salicylic acid to be sold under that name.

In return the Heyden Chemical Works obligated itself to pay to The Bayer Company, one-third of the net profits realized from the sale of the acid. A copy of this contract which is terminable "six months following the conclusion of the definite peace by which the present European war shall be ended" is on file at the office of the Director, Bureau of Sales.

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**THE BAYER CO., Inc.**

**APPRAISAL**

**Estimated Cost of Reproduction New, Less Depreciation for Land, Plant and Equipment, at Rensselaer, as Prepared by Ford, Bacon & Davis, Engineers, New York City.**

**Summary of Valuation**

| Classification | Reproduction Cost, New, Less Depreciation | |
|---|---|---|
| | Based on 1914 Prices | Based on 1918 Prices |
| Land | $60,000 | $ 60,000 |
| Buildings and Miscellaneous Structures | 616,766 | 1,060,261 |
| Machinery | 311,811 | 552,569 |
| Transmission | 12,235 | 19,575 |
| Factory Equipment | 12,522 | 22,935 |
| Power and Filtration Plant Equipment | 38,767 | 74,150 |
| Pipe and Fittings | 18,194 | 36,363 |
| Power Wiring | 2,391 | 3,827 |
| Yard | 109,575 | 183,552 |
| Office Furniture and Fixtures | 5,145 | 9,788 |
| Total | $1,187,406 | $2,023,020 |
| Organization and Legal Expenses, Engineering and Supervision, Interest, Taxes and Insurance, during Construction and General Contingencies, 15% of the above | 178,111 | 303,453 |
| Reproduction Cost New, Less Depreciation | $1,365,517 | $2,326,473 |
| Amount of Depreciation | $177,662 | $324,484 |
| Reproduction Cost New | $1,543,179 | $2,650,957 |

*Plaintiff's Exhibit No. 612*

**New York Sales Office**

| | Reproduction Cost New, Less Depreciation | |
|---|---|---|
| | Based on 1914 Prices | Based on 1918 Prices |
| Furniture and Fixtures ..... | $14,969 | $23,094 |
| Amount of Depreciation ..... | $10,633 | $15,317 |
| Total Reproduction Cost New ..... | $25,602 | $38,411 |

**THE BAYER CO., Inc., BALANCE SHEET, JUNE 30, 1918**

**As prepared by Lybrand Ross Bros. & Montgomery, Certified Public Accountants.**

| ASSETS. | | | LIABILITIES. | | |
|---|---|---|---|---|---|
| Current— | | | Current— | | |
| Cash on hand and in bank | | $191,140.81 | Notes Payable, Banks | $45,000.00 | |
| Notes Receivable | | 7,000.00 | Accounts Payable, Trade Creditors | 224,028.10 | |
| Accounts Receivable: | | | Accrued Commission, etc. | 303.94 | |
| Domestic Customers' balance, net of reserve | $283,133.04 | | Accrued Taxes Estimated on Existing Laws (Under proposed 1918 law the tax assessed would be about $5,000 additional for period ended June 30, 1918.) | 57,102.11 | |
| *Foreign accounts (undepreciated) | 167,284.23 | | Employees' payments, account of Liberty Bonds | 13,740.50 | $340,174.65 |
| Heyden Chemical Works | 48,211.66 | | | | |
| Williams & Crowell Color Co. (cash advanced) | 130,000.00 | | Synthetic Patents Co. (60 per cent. of Bayer Co., Inc., Profits) | $298,552.42 | |
| Advances to employees | 3,898.91 | 632,527.84 | Less land transferred | 8,500.00 | 290,052.42 |
| Inventories— | | | Enemy Creditors— | | |
| Materials, raw, partly finished and finished: | | | Dr. Duisberg et al., note due three months after close of war | $300,000.00 | |
| Held in United States | $1,286,998.22 | | Fredr. Bayer & Co., Brazil | 19,776.01 | |
| *Held by foreign agencies | 117,987.27 | | Fredr. Bayer & Co., Chile | 13,994.47 | |
| Manufacturing expense supplies | 176,820.23 | 1,581,805.72 | Farbenfabriken of Elberfeld (20 per cent. of Bayer & Co. profits) | 99,517.48 | 433,287.96 |
| Liberty Bonds purchased for account of employees | | 18,207.00 | | | |

Plaintiff's Exhibit No. 612

1473

| | | |
|---|---|---|
| Investments— | | |
| U. S. Liberty Bonds (2d loan) deposited with A. Mitchell Palmer, A. P. C. .... | $290,000.00 | |
| U. S. Liberty Bonds 2d Loan ..... | 50,000.00 | |
| U. S. Liberty Bonds 3d Loan ..... | 14,000.00 | |
| U. S. Finishing Co. Bonds ..... | 10,000.00 | $364,400.00 |
| Total Current Assets ..... | | $2,794,681.37 |
| Plant— | | |
| Buildings (erected on leased land) ..... | $644,374.80 | |
| Machinery and Tools ..... | 720,786.17 | |
| Furniture and Fixtures ..... | 18,285.24 | |
| Automobiles ..... | 21,184.76 | |
| | $1,404,630.97 | |
| Less Reserve for Depreciation ..... | 161,732.71 | 1,242,898.26 |
| Deferred Charges— | | |
| Unexpired Insurance ..... | $3,551.49 | |
| Prepaid Rentals ..... | 6,666.67 | 10,218.16 |
| Enemy Debtors— | | |
| Dr. Duisberg et al. ..... | $38,189.83 | |
| Fredr. Bayer & Co., Argentine ..... | 19,753.18 | |
| H. C. A. Seebohm ..... | 736.33 | |
| A. Mothwurf ..... | 3,062.87 | |
| R. Hütz ..... | 437.02 | 62,179.23 |
| | | $4,109,977.02 |

*Includes Stock and Accounts approximately $110,000 held by certain blacklisted agents which are now in process of transfer to new agents.

| | | |
|---|---|---|
| Moneys received for undisclosed purposes, | | |
| From China ..... | $190,000.00 | |
| From Brazil ..... | 100,000.00 | $290,000.00 |
| First Mortgage 6 per cent. Gold Bonds (converted into common capital stock June 20, 1917.) | | |
| Second Mortgage Bonds, amounting to $500,000, were extinguished on December 31, 1915, according to the Company's record. These bonds, in the hands of C. J. Hardy, Oct. 17, 1918, should have been surrendered to the Columbia Trust Co., registrar, for cancellation of mortgage and satisfaction of records. | | |
| Capital— | | |
| Preferred Stock outstanding, 2,250 shares 8 per cent., cumulative, par $100 .... | $225,000.00 | |
| Common Stock issued and outstanding (5250 shares, par $100 authorized) ... | 525,000.00 | |
| Surplus, as annexed ..... | 2,006,461.99 | 2,756,461.99 |
| | | $4,109,977.02 |

## WILLIAMS AND CROWELL COLOR COMPANY

### APPRAISAL

**Estimated Cost of Reproduction New, Less Depreciation for Land, Plant and Equipment as Prepared by Ford, Bacon & Davis, Engineers.**

SUMMARY OF VALUATION.

| Classification | Reproduction Cost, New, Less Depreciation Based on 1914 Prices | Based on 1918 Prices |
|---|---|---|
| Land | $6,300.00 | $6,615.00 |
| Building and Miscellaneous Structures | 29,804.15 | 50,050.78 |
| Machinery | 281.98 | 457.40 |
| Transmission | 1,387.95 | 2,511.30 |
| Factory Equipment | 15,350.92 | 27,212.59 |
| Power Plant Equipment | 1,000.00 | 1,800.00 |
| Pipe and Fittings | 291.67 | 525.00 |
| Yard | 4,419.62 | 7,109.69 |
| Furniture and Fixtures | 2,037.30 | 3,065.06 |
| Organization and Legal Expenses, Engineering and Supervision, Interest, Taxes and Insurance, during Construction and General Contingencies, 15% of the above | 9,131.04 | 14,902.07 |
| Total | $70,004.63 | $114,249.19 |
| Stores and Supplies | 8,192.89 | 14,747.19 |
| Total Reproduction Cost New, Less Depreciation | $78,197.52 | $128,996.38 |
| Amount of Depreciation | $57,048.57 | $88,665.60 |
| Reproduction Cost New | $135,246.09 | $217,661.98 |

---

**Statement of Income for Six Months Ended June 30, 1918**

Prepared by Haskins and Sells, Certified Public Accountants

| | |
|---|---|
| Sales | $546,616.74 |
| Gross Profit | 260,085.21 |
| General Expenses | 14,540.78 |
| Net Profit | 245,544.43 |
| Other Income | 384.51 |
| Income Charges | 5,077.69 |
| Net Profit | 240,851.25 |

No provision for Income or Excess Profits Taxes is included in this statement.

## WILLIAMS & CROWELL COLOR COMPANY, Inc., BALANCE SHEET, JUNE 30, 1918

As prepared by Haskins & Sells, Certified Public Accountants

### ASSETS.

| | | |
|---|---|---|
| Current Assets— | | |
| Cash on Deposit | | $9,328.01 |
| Cash on hand—New York office | | 17.73 |
| Cash on hand—Providence office | | 533.41 |
| Cash in hands of H. C. A. Seebohm, Treasurer | | 6,000.00 |
| War Savings Stamps | | 41.70 |
| United States Government Third Liberty Loan Bonds, purchased for employees | | 1,450.00 |
| Subscription to United States Government Third Liberty Loan Bonds (25 per cent. paid) | | 2,000.00 |
| The Bayer Company, Inc.: | | |
| Due on Current Account | $184,313.71 | |
| Less due on Loan | 130,000.00 | 54,313.71 |
| North Jersey Warehouse Company | | 101,600.00 |
| Loan—William Fisher | | 750.00 |
| Sundry Accounts Receivable | | 783.70 |
| Inventories: | | |
| Standardized Products and Mixtures | | 730.47 |
| Work in process | | 38,546.59 |
| Materials for product | | 65,135.91 |
| Expense, material and supplies | | 5,829.71 |
| Packages | | 7,042.00 |
| Total Current Assets | | $294,102.94 |

### LIABILITIES.

| | |
|---|---|
| Current Liabilities— | |
| The Chemical Company of America | $2,463.45 |
| The Products & Chemical Company | 6,883.20 |
| Hine Brothers | 1,902.18 |
| The MacKenworth Company | 257.60 |
| John D. Lewis | 306.93 |
| Edwin Knowles | 4.25 |
| Unpaid installments on subscription to Third Liberty Loan Bonds | 1,500.00 |
| Total Current Liabilities | $13,317.61 |
| Capital Stock, 1,000 shares, without par value | 100,000.00 |
| Profit and Loss Surplus | $240,851.25 |
| Total | $354,168.86 |

| | |
|---|---|
| **Plant Property—** | |
| **Real Estate and Building** | $3,000.00 |
| Machinery and Equipment | 17,004.87 |
| Horses and Wagon | 767.23 |
| Furniture and Fixtures | 676.68 |
| Total Plant Property | $21,448.78 |
| Good will and formulae | 32,364.54 |
| Deferred Debit Items— | |
| Improvements on Leasehold Property | 5,405.31 |
| Rent paid in advance | 564.00 |
| Insurance Premiums, unexpired portion | 283.29 |
| Total Deferred Debit Items | $6,252.60 |
| Total | $354,168.86 |

NOTE—No provision for Federal Income and Excess Profits Taxes Accrued for the six months ended June 30, 1918, is included in the above statement.

## THE BAYER COMPANY, Inc.

**Condensed Comparative Summary of Earnings and Expenses from June 12, 1913, to June 30, 1918**

Prepared from Report of Lybrand Ross Bros. & Montgomery, Certified Public Accountants.

| | Six months to June 30, 1918 | Year Ended Dec. 31, 1917 | Year Ended Dec. 31, 1916 | Year Ended Dec. 31, 1915 | Year Ended Dec. 31, 1914 | June 12, 1913 to Dec. 31, 1913 |
|---|---|---|---|---|---|---|
| Sales | $2,841,422.60 | $5,608,502.51 | $6,006,618.77 | $5,536,096.52 | $6,465,320.01 | $2,498,898.62 |
| Gross Profit | 1,031,406.81 | 2,810.726.14 | 2,922,621.14 | 2,708,608.25 | 2,702,391.71 | 1,066,553.49 |
| Expense, Administrative, Selling and General | 533,390.59 | 1,047,583.64 | 704,396.13 | 626,336.51 | 877,245.98 | 439,047.01 |
| Taxes | 126,538.42 | 84,598.33 | 14,157.73 | 12,121.45 | 9,446.54 | 1,992.93 |
| Profit from Operations | 371,477.80 | 1,678,544.17 | 2,204,067.28 | 2,070,150.29 | 1,815,699.19 | 625,513.55 |
| Other Income | 148,214.89 | 90,022.61 | 12,109.69 | | | |
| Income Charges | 22,105.32 | | 38,300.00 | 52,500.00 | 47,812.50 | |
| Net Profits | 497,587.37* | 1,768,566.78 | 2,177,876.97 | 2,017,650.29 | 1,767,886.69 | 625,513.55 |

*The combined net earnings of the Bayer Company and its subsidiary, the Williams & Crowell Color Company, as shown by the condensed statements herein for the six months ending June 30th, 1918, was $738,438.62.

**SYNTHETIC PATENTS CO., Inc.**

**Comparative Statement of Income for the Periods Ended December 31, 1913, to June 30, 1918**

Prepared from Report of Lybrand Ross Bros. & Montgomery, Certified Public Accountants

| | Six months ended June 30, 1918 | Year Ended Dec. 31, 1917 | Year Ended Dec. 31, 1916 | Year Ended Dec. 31, 1915 | Year Ended Dec. 31, 1914 | June 4, 1913, to Dec. 31, 1913 |
|---|---|---|---|---|---|---|
| Gross Income* | $325,114.56 | 1,079,128.47 | $1,315,323.05 | $1,359,184.00 | $1,214,538.58 | $255,241.54 |
| Expenses | 3,806.02 | 19,172.16 | 19,132,76 | 27,792.93 | 37,296.32 | 16,502.04 |
| Gross Profit | $321,308.48 | 1,059,956.31 | $1,296,190.29 | $1,331,391.07 | $1,177,242.26 | $238,739.50 |
| Deductions from Income: | | | | | | |
| Dr. Duisberg et al. | | 10,000.00 | | | | |
| Interest on Loan | | 13,500.00 | 13,500.00 | 13,500.00 | 13,945.50 | 7,425.00 |
| Amortization of Patents | | 19,750.00 | 19,750.00 | 195,500.00 | 172,000.00 | |
| Taxes | 41,385.69 | 7,674.51 | 1,457,04 | 1,359.51 | 529.72 | |
| Total Deductions | $41,385.69 | $50,924.51 | $34,707.04 | $210,359.51 | $186,475.22 | $7,425.00 |
| Net Profit | 279,922.79 | 1,009,031.80 | 1,261,483.25 | 1,121,031.56 | 990,767.04 | 231,314.50 |

*Entire income was derived from The Bayer Company, Inc., except $13,228.75 in 1918 and $10,030.95 in 1917.

**BALANCE SHEET, JUNE 30, 1918**

| ASSETS: | | LIABILITIES: | | |
|---|---|---|---|---|
| Cash in bank and on hand | $23,482.26 | Deposit on Rental | | $6,666.67 |
| The Bayer Company, Inc. | 290,052.42 | Accrued Taxes estimated on existing laws | | 9,073.22 |
| Real Estate | 58,500.00 | Dr. Duisberg "Enemy Creditor" | | 223,914.32 |
| Patents and Trade Marks at book values | 16,000.00 | CAPITAL: | | |
| Dr. Duisberg et al "Enemy Debtor" | 538,146.51 | Common Stock, 500 shares par value $100 | $50,000.00 | |
| | | Surplus | 580,518.51 | |
| | | Profits after dividends | 56,008.47 | |
| | | | | 686,526.98 |
| | $926,181.19 | | | $926,181.19 |

## PLAINTIFF'S EXHIBIT No. 613.

Statement of Fees and Compensation paid to the firm of Emery, Varney, Blair and Hoguet by Alien Property Custodian for dates stated as shown by Alien Property Custodian Report of 1922.

| Name of Company | Page of Miller Report | Date of Payments | Amount |
|---|---|---|---|
| 1. American Industrial Gas Co. | 18 | Sept. 22, 1919 | $440.00 |
| 2. American Junkers Co. | 20 | June 3, 1919 | 103.25 |
| 3. American Lava Co. | 23 | Jan. 15, 1919 | 172.43 |
| 4. American Pyrophor Co. | 35 | Jan. 4, 1919 | 552.00 |
| 5. American Radium Co. | 38 | June 5, 1919 | 250.00 |
| 6. Amid Duron Co. | 55 | Nov. 1, 1919 | 528.50 |
| 7. Atlantic Communication Co. | 61 | (July 1, to<br>(Nov. 26, 1919 | 7,110.72 |
| 8. American Welding Corp. | 66 | Nov. 1, 1919 | 952.25 |
| 9. The Bauer Chem Co. | 79 | (July 16, and<br>May 3, 1919 | 1,139.16<br>1,573.83 |
| 10. The Bayer Co. | 86 | Jan. 30, 1919 | 2,615.59 |
| 11. Becker Steel Co. | 90 | (Jan. 23, and<br>March 24, 1919 | 210.00 |
| 12. Ernest Gideon Beck Mfg. Co. | 113 | Sept. 2, 1919 | 876.65 |
| 13. Berger & Wirth | 115 | Jan. 10, 1919 | 350.00 |
| 14. Martin S. Bemet, Inc. | 117 | | 50.00 |
| 15. The Birkholz Co. | 118 | Nov. 1, 1919 | 75.00 |
| 16. Bosch Magneto Co. | 135 | (Nov. 1, 1918<br>(Jan. 20, 1919<br>(Dec. 6, 1918 | (1,563.51<br>( 782.51 |
| 17. Bronze Powder Works Co. | 167 | (Jan. 20, 1919 | 198.03 |
| 18. Chillingworth Mfg. Co. | 183 | May, 1922 | 217.00 |
| 19. J. P. Devine & Co. | 197 | March 26, 1920 | 501.75 |
| 20. Didier-March Co. | 205 | January, 1919 | 1,762.37 |
| 21. Eiseman Magneto Co. | 212 | June 5, 1919 | (350.00<br>(150.00 |
| 22. Heins Frank Sons, Inc. | 238 | July 16, 1919 | (541.00<br>(453.03 |
| 23. General Ceramics Co. | 251 | (Jan. 16, 1919<br>(June 5, 1919 | (919.88<br>(496.46 |
| 24. Gen'l. Mfg. & Exporting Co. | 257 | | 50.00 |
| 25. Goerz American Optical Co. | 293 | Dec. 14, 1920 | ( 882.60<br>(3,572.66 |

| Name of Company | Miller Report Page of | Payments Date of | Amount |
|---|---|---|---|
| 26. Goetze & Gasket Packing Co. | | | ($437.42 |
| | | | ( 90.00 |
| 27. Golde Patent Mfg. Co. | 302 | June 5, 1919 | (453.32 |
| | | | (378.87 |
| 28. Herman Delaire Shaefer Co. | 309 | | 150.00 |
| 29. G. & W. Heller Co. | 320 | Sept. 22, 1919 | (100.00 |
| | | | (175.00 |
| 30. Chas. Hellmuth, Inc. | 322 | Sept. 22, 1919 | 402.35 |
| 31. J. A. Henckels | 322 | March 25, 1919 | 176.45 |
| 32. The Hayden Chem. Co. | 328 | (Nov. 25, 28, | |
| | | ( 1918 and May | (550.00 |
| | | ( 3, 1919 | (725.00 |
| 33. International Textile, Inc. | 337 | (Jan. 15, 1919 | (200.00 |
| | | (June 4, 1919 | (287.05 |
| 34. International Ultra-Marine Works | 345 | (Dec. 6, 1918 | |
| | | (Jan. 20, 1919 | 275.00 |
| 35. Dr. Jaegers Sanitary Woolen System Co. | 348 | May 3, 1919 | 735.00 |
| 36. Jagenberg Machine Co. | 350 | Sept. 19, 1919 | (350.00 |
| | | | (669.25 |
| 37. The Jarecki Chem. Co. | 352 | June 5, 1919 | 125.00 |
| 38. Kaffee Hog Corp. | 356 | July 16, 1919 | 1,237.10 |
| 39. Kny-Scherer Corp. | 369 | Apr. 10, 1919 | (2,721.08 |
| | | | ( 804.20 |
| 40. E. Lietz Inc. | 385 | March 26, 1920 | 300.00 |
| 41. The Litosilo Co. of America | 391 | Nov. 1, 1919 | 284.05 |
| 42. Locomotive Superheater Co. | 393 | | 900.00 |
| 43. H. Lock & Co. | 395 | Oct. 27, 1919 | 50.00 |
| 44. Martini & Huneke Co. | 408 | Sept. 22, 1919 | 920.45 |
| 45. Merck & Co. | 411 | (May 3, & July | |
| | | ( 16, 1919 | 1,213.75 |
| 46. Messer Mfg. Co. | 415 | Dec. 28, 1918 | ( 115.50 |
| | | (March 15, 1919 | ( 50.00 |
| 47. Nuhmens & Knopff | 419 | (Nov. 22, 1919 | |
| | | (March 1, 1920 | 1,963.00 |
| 48. New Brunswick Chem. Co. | 429 | June 5, 1919 | 155.00 |
| 49. New York Patent Exportation Co. | 439 | Feb. 7, 1919 | (1,265.00 |
| | | | ( 67.60 |
| 50. Norma Co. of America | 442 | July 16, 1919 | 1,620.00 |
| 51. Orenstein & Koppel | 446 | Sept. 28, 1918 | 2,000.00 |
| 52. The Pass-Kremer Hatband Mfg. Co. | 463 | April 5, 1919 | ( 175.00 |
| | | | ( 35.00 |

| Name of Company | Miller Report Page of | Payments Date of | Amount |
|---|---|---|---|
| 53. Pass-Washburn Co. | 465 | | $75.00 |
| 54. Perth Amboy Chem. Works | 472 | | 110.00 |
| 55. Ralak Tire & Rubber Co. | 474 | July 18, 1919 | 341.15 |
| 56. Ratan & King Co. | 481 | Dec. 27, 1919 | 50.00 |
| 57. G. Reis & Bro. | 485 | Sept. 22, 1919 | 302.00 |
| 58. F. A. Richter & Co. | 488 | May 3, 1919 | (382.30 |
| | | | (250.00 |
| 59. Riedel & Co. | 489 | May 3, 1919 | (431.50 |
| | | | (319.37 |
| 60. Roessler & Hasslacher Chemical Co. | 493 | | 4,327.52 |
| 61. Rohn & Haas | 495 | March 25, 1920 | 1,806.65 |
| 62. Schafer & Budenberg Mfg. Co. | 505 | July 18, 1919 | 1,217.68 |
| 63. Shutte & Koerting Co. | 502 | Nov. 18, 1919 | ( 822.34 |
| | | | (1,160.85 |
| 64. Sales Co. | 516 | | 122.00 |
| | | (Sept. 23, 1918 | |
| 65. C. C. Siegle Co. | 523 | (Jan. 10, 1919 | 1,120.00 |
| | | (Feb. 8, 1919 | |
| 66. Robert Soltan & Co. | 526 | (Jan. 15, 1919 | (216.00 |
| | | (July 16, 1919 | (283.55 |
| 67. F. Speidel & Co. | 530 | (Nov. 15, 1918 | |
| | | (Feb. 5, 1919 | 945.55 |
| 68. The Sterling Co. | 539 | | 190.00 |
| 69. Stollwerck Bros. | 544 | (Dec. 6, 1918 | (846.32 |
| | | (Jan. 20, 1919 | (133.90 |
| 70. Thonet Bros. | 552 | Dec. 27, 1919 | 50.00 |
| 71. Traun Rubber Co. | 564 | July 16, 1919 | ( 80.00 |
| | | | (102.50 |
| 72. United Brush Manufactories | 569 | Sept. 22, 1919 | (1,180.63 |
| | | | ( 362.15 |
| 73. J. M. Boith Co. | 585 | March 25, 1920 | 410.00 |
| 74. M. Welte & Sons | 590 | June 10, 1919 | 177.25 |
| 75. Werner & Pfleiderer Co. | 595 | Sept. 22, 1919 | 2,630.55 |
| 76. Webster Stone Co. | 601 | Feb. 17, 1921 | 150.00 |
| 77. Wolfe Safety Lamp Co. | 605 | (July 16, 1919 | |
| | | (Apr. 23, 1919 | 481.25 |
| 78. George Benda | 610 | May 3, 1919 | 375.00 |
| 79. A. W. Taber | 614 | May 1, 1919 | 600.00 |
| 80. Germania Worsted Mills | 620 | Oct. 16, 1918 | 100.00 |
| 81. Waldes & Co. | 631 | | 285.25 |
| 82. White Metals Mfg. Co. | 632 | Jan. 13, 1919 | 317.53 |

In addition to the foregoing facts, Hoguet was a director and President of the American Junkers' Co. from August 30, 1918, to

June 11, 1919, and received (See p. 20, Custodian's Report) as fees, $100.

He was also a director of the Williamsburg Chemical Co. from September 4, 1918 to ——— (See p. 603, Custodian's Report) and received in fees, $600.

The Williamsburg Chemical Co. was returned under Section 9 of the Act.

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## PLAINTIFF'S EXHIBIT No. 614.

NAVY DEPARTMENT
BUREAU OF ORDNANCE
Washington, D. C.

(Sp-1)-0
MTH.

Jan. 23, 1920.

MEMORANDUM

To: Chief of Bureau.
Subject: Alien Enemy Patents.

1. I have just returned from New York where I had several interviews with Mr. Ramsay Hoguet, Special Counsel on patents for the Alien Property Custodian. Mr. Hoguet is also acting as Special Counsel for the Chemical Foundation Company, a semi-official corporation. It is suggested that the subject of acquiring licenses for the benefit of the Government and particularly the Navy Department under the patents seized by the Alien Property Custodian, some of which have been assigned to the Chemical Foundation Company—be taken up at the weekly conference of the several Chiefs of the Bureaus of the Department in the very near future.

2. The following explanation of the situation is presented. During the War the Alien Property Custodian, among his other functions and duties was re-

quested to seize all United States patents owned or controlled by enemy aliens or corporations. Approximately 7500 patents were thus seized, a large per cent. of which enter either directly or indirectly into the manufacture of munitions or supplies suitable for naval use. The variety of subjects is, of course, large and includes not only ordnance, director firing systems (optics and glass), projectiles, armor plate, explosives and chemicals all of material value to this Bureau, but also comprehends the manufacture or construction of ships, boilers, motors and generators of interest to the Bureaus of Construction and Repair and Steam Engineering; nautical instruments, gyros, compasses, and gyroscopes are of probable interest especially to the Bureau of Navigation; various medicines, chemicals and surgical devices are of value to the Bureau of Medicines and Surgery, numerous miscellaneous patents having to do with foods, food preservation, storage and packing, dyes and cloth are of perhaps indirect interest to Supplies and Accounts.

3. Of the above referred to 7500 patents approximately 4000 of these have been taken over by the Chemical Foundation Company which is strictly an American Corporation under a directorship of the Alien Property Custodian and who is also President of the Company, created for the purpose, among others, of taking over patents of a chemical nature, in its broadest aspect, from the Alien Property Custodian and acting as a holding company for the purpose of protecting American industries. It might be stated here that the larger part of German owned patents were for the purpose of protecting the use and sale of German products in this country, which products were manufactured in Germany. This Company is empowered to license any and all manufacturers in this country, desiring to manufacture a certain product or article covered by any particular patent or patents, on equal terms thus stimulating United States manu-

factures but the Company is given wide discretion regarding its dealings with the United States Government or any Department thereof.

4. Some of these 7500 patents would be of little or no interest to any Bureau of the Navy but probably would be to some Department of the Government. The majority of them, it is believed, would enter, either directly or indirectly in the manufacture of Navy supplies and some of them would be of great value to the Department. On the other hand, some of these patents are probably, from a strictly patent point of view, of little or no value due to the narrow scope of claim or the invalidity of such claims. Others are probably of an almost basic character and consequently the obtaining of rights thereunder would be of great value from a financial point of view. It is believed that to examine these patents with a view of determining those that were of interest or value would be an uncertain and very time consuming procedure involving the necessity of obtaining copies of all of the patents, making a preliminary division and distribution thereof to the respective Bureaus interested and awaiting and compiling reports and making recommendations based thereon.

5. The suggestion is, therefore, made for earnest consideration by the conference of the Chiefs of the Bureaus on,

*1st.* The advisability of making a request at this time upon the Alien Property Custodian for a blanket license to manufacture and use and have manufactured for the use of the Navy Department any articles, devices, or processes covered by any and all of the patents seized by him and in which he now retains title.

*2nd.* That a request be made to the Chemical Foundation Company for such similar license under the patents now held by them.

6. It is believed by Mr. Hoguet that the consideration for the first license should be an adequate one, say not less than $100,000, which amount is about thirty-five dollars for each patent or the equivalent of the Government fees necessary to obtain such patent. This is to forestall any suit to recover title based on inadequate consideration. As to the 4000 patents now held by the Chemical Foundation Company, it is believed that a much smaller possibly a nominal consideration would be sufficient. Mr. Neagle, of the Solicitor's office, does not agree as to these considerations and believes both licenses should be obtained as a matter of right for nominal consideration. He also states that some patents have already been obtained but inquiry has not established such fact to date to any material extent.

7. Among the advantages obtained by such a step would be,

*1st.* The ultimate saving of perhaps millions of dollars required to be paid by the Government because of royalties on patents. It is possible that after the treaty is ratified that the property retained by the Alien Property Custodian will be returned to the former owners in which case the Government would be open to suits for infringement and demands for royalties on all such patents returned if infringed by use or manufacture.

*2nd.* It would eliminate the possibility of the exclusive manufacturing rights under any of these patents falling in the hands of any individual or Company who could place the Department under the same financial burden of patent royalties as the former alien enemy owner.

*3rd.* The question of competitive bids would be simplified to a certain extent and the unfairness of permitting one Company having patent rights to materially underbid a competitor by reason of royalty charges would be eliminated.

*4th.* The question of future damages or rights by United States of Departmental manufacture or use of the articles or process covered by such patents would also disappear.

8. All things considered, it is believed that this is an opportunity to save the Government vast sums of money at a very small expense. The time for taking action will be limited by reason of the ratification of the Peace Treaty or subsequent legislation regarding those rights in patents now held by the Alien Property Custodian. As it would probably take considerable time to negotiate and arrange for such licenses the necessity for early action will be apparent.

9. Colonel Wolff and Colonel Mount, of the War Department, are very anxious to cooperate in this matter and intend to file requests for similar licenses at an early date.

(Sgd.) P. A. BLAIR.

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**PLAINTIFF'S EXHIBIT No. 615.**

Op-13 2/9

Feb. 11, 1920.

Sir:

With reference to the United States patents owned or controlled by enemy aliens or corporations that have been or may be seized by the Alien Property Custodian during the World War: A large percentage of these patents enter directly or indirectly into the manufacture of munitions or supplies suitable for naval use. They cover not only ordnance, directer

firing systems, optics, glass, projectiles, armour plate, explosives, and chemicals of all kinds, but also the construction of naval vessels, boilers, generators, nautical instruments, gyros, compasses, gyroscopes, medicines, drugs, surgical devices, foods, food preseration, storage and packing, dyes and cloth. Some of these approximately 7,500 patents would be of little interest to the Navy Department, but the majority of them, it is believed, would enter, either directly or indirectly, into the manufacture of naval supplies and some of them are of great value to the Navy Department.

The detailed examination of this large number of patents, with a view of determining those that are of interest or value, would be a very uncertain and time consuming procedure, involving obtaining copies of all the patents, distributing them to the various bureaus and activities of the Navy Department, and the compilation of the various reports and recommendations based upon a detailed and careful examination. The Navy Department, therefore, requests that the Alien Property Custodian grant to the Navy Department a blanket license for the manufacture and use of articles, devices, or processes covered by any and all of the patents, formerly owned or controlled by enemy aliens or corporations, that have been seized by the Alien Property Custodian and in which he retains title.

The Navy Department further desires your advice as to what should be the proper considerations for the use of these patents, in order to protect the United States from future suits or actions.

The Secretary of the Navy begs to point out the following advantages to the United States that would probably result from the action requested above:

*1st.* The ultimate savings of perhaps millions of dollars required to be paid by the Government

because of royalties on patents. It is possible that after the treaty is ratified that the property retained by the Alien Property Custodian will be returned to the former owners in which case the Government would be open to suits for infringement and demands for royalties on all such patents returned if infringed by use or manufacture.

*2nd.* It would eliminate the possibility of the exclusive manufacturing rights under any of these patents falling in the hands of any individual or Company who could place the Department under the same financial burden of patent royalties as the former alien enemy owner.

*3rd.* The question of competitive bids would be simplified to a certain extent and the unfairness of permitting one Company having patent rights to materially underbid a competitor by reason of royalty charges would be eliminated.

*4th.* The question of future damages or rights by United States for Departmental manufacture or use of the articles or processes covered by such patents would also disappear.

A blanket license somewhat similar to that requested above is now held by the Chemical Foundation, Inc.; and, as some of the patents thus granted that corporation concern the Navy Department, information is desired as to the proper parties to whom requests for a license to use patents now held by that body should be made.

Sincerely yours,

(Sgd.) JOSEPHUS DANIELS.

Hon. Francis P. Garvan,
Alien Property Custodian,
Sixteenth and P Streets,
Washington, D. C.
(Copy to Bu. Ord.)

**PLAINTIFF'S EXHIBIT No. 616.**

(L3-1)-O DH

July 28, 1920.

Subject: Ownership of Patents.

Sir:

Referring to your letter of inquiry of the 10th inst., regarding the ownership of the seven patents referred to in the Department's letter of July 1, 1920, the following information, taken from the patents, is furnished:

875,036 (Gyroscope) granted to Narciss Ach, of Marsburg, Germany, "a citizen of the German Empire."

954,634 (Turbine-drive of gyroscopic steering gears of torpedoes) granted to Albert Edward Jones, of Fiume, Austria, "subject of His Majesty, The King of Great Britain"—Patented April 12, 1920.

1,025,747 (Gyroscope for automobile torpedoes) granted to Albert Edward Jones, "assignor to Messrs. Whitehead and Co., of Fiume, Austria-Hungary, a corporation."

1,036,256 (Illuminating-Indicator) granted to Arthur Junghans, of Schramberg, Germany, "a subject of the King of Wurttemburg."

1,136,566 (Gyro-compass) granted to Hans Usener, of Kiel, Germany, "a subject of the King of Prussia."

1,143,975 (Gyroscope) granted to "Paul Kortmann, of Berlin-Waidmanns-lesst, Germany, assignor to Berliner Maschinenbau-Aktiengesellschact, Normals L. Schwartzkopff, of Berlin, Germany, a Corporation of Prussia."

1,173,435 (Gyroscopic Steering Device for Torpedoes) granted to Albert Edward Jones, of Fiume, "subject of the King of Hungary," patented February 29th, 1916.

Attention is invited to the fact that Albert Edward Jones, patentee in Number 954,634, is later described as a citizen of the King of Hungary, as pointed out in the Department's letter of June 24th, 1920, to the Alien Property Custodian.

Very truly yours,
CHAS. B. McVAY, Jr.
*Rear Admiral, U. S. Navy,*
*Chief of Bureau.*

Alien Property Custodian,
16th & P St., NW., City.

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**PLAINTIFF'S EXHIBIT No. 617.**

Navy Department.
Bureau of Ordnance,
Washington, D. C.
June 18, 1920.

*Memorandum for Chief of Bureau*

Subject: Patents held by Alien Property Custodian—Acquisition of.

1. It is recommended that, if any action is taken towards purchase of any patents held by the Alien Property Custodian, the following patents be included:

| | | | |
|---|---|---|---|
| 1,098,074 | May 26/14 | F. Zottich | —gyroscope |
| 1,143,975 | June 22/15 | P. Kortmann | —gyroscope |
| 1,173,435 | Feb. 29/16 | A. E. Jones | —gyroscope |
| 954,634 | Apr. 12/10 | A. E. Jones | —gyroscope |
| 1,005,647 | Oct. 10/11 | A. E. Jones | —torpedo engine |

| | | | |
|---|---|---|---|
| 1,025,747 | May | 7/12 | A. E. Jones —gyroscope |
| 899,304 | Sept. | 22/08 | A. E. Jones —immersion regulator |

2. None of the above patents, in my opinion, are of great value, but if they can be acquired with others and at no great cost I believe that they should be obtained.

(Sgd.) G. B. WRIGHT.

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**PLAINTIFF'S EXHIBIT No. 618.**

ALIEN PROPERTY CUSTODIAN
Sixteenth and P. Sts. N. W.
Washington, D. C.

January 14, 1921.

Navy Department,
Bureau of Ordnance,
Washington, D. C.

*Attention of Commander A. L. Norton*

Dear Sir:

Attached you will find a list of one hundred and sixty (160) Patents which have been assigned to The Chemical Foundation, Inc., and which Dr. Van Doren agreed to license to the Government. I have sent the original of this list to Dr. Van Doren at his request, but will suggest that you write The Chemical Foundation, Inc., 81 Fulton Street, New York, attention of Dr. Van Doren, and request him to execute an Assignment to the Government, covering this list or such a part of it as your Department may desire.

I will appreciate it if you will do this without awaiting the completion of the full list of Patents you desire, as the placing of this Assignment on record

would materially assist us in the final adjustment of our records.

I received this morning the correspondence in regard to the gyroscope and other patents and will give this immediate attention.

Very truly yours,

J. R. ZIMMERMAN,
*Division of Records.*

JRZ: MBJ

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**PLAINTIFF'S EXHIBIT No. 619.**

THE CHEMICAL FOUNDATION
Incorporated
81 Fulton Street
New York City

Commander A. L. Norton, January 17, 1921.
General Inspector of Ordnance.
Bureau of Ordnance.
Navy Department,
Washington, D. C.
Dear Sir:

In accordance with our conference of last week, we take pleasure in handing you herewith six (6) copies of the temporary list of patents owned by the Chemical Foundation, Inc.

We shall be pleased to assign to the War and Navy Departments a license to manufacture for their own use, the improvements set forth in any of the patents contained in the aforesaid list which you may feel will be of importance or value in your work.

Trusting that we may have the pleasure of hearing from you at an early date with respect to this matter, we remain,

Yours very truly,
THE CHEMICAL FOUNDATION INC.
By LLOYD VAN DORAN.

IVD: ACK
Encs

**PLAINTIFF'S EXHIBIT No. 620.**

N. Ord. 6.

In Reply Address

Bureau of Ordnance, Navy Department
and Refer to No.

37649/2(S1)—O
ALB

NAVY DEPARTMENT
BUREAU OF ORDNANCE
Washington, D. C.

MEMORANDUM

Jan. 19, 1921.

To: All desks.

Subject: Purchase of License under patents from the Alien Property Custodian.

Inclosure: (A) List of patents and copyrights transferred to the Chemical Foundation, Inc.
(Herewith)

(B) Copy of letter of Chem. Foundation of Jan. 17, to the Bureau of Ordnance.

1. It is requested that Desk "S" be furnished immediately with a list of patents from the attached temporary list of the Chemical Foundation, Inc., considered of importance or value to the Bureau in order that a license may be requested.

CHAS. B. McVAY, JR.,
*Chief of Bureau.*

## PLAINTIFF'S EXHIBIT No. 621.

N. Ord. 6.

In Reply Address
Bureau of Ordnance, Navy Department
and Refer to No.
37649/2(S1)—O
ALB

NAVY DEPARTMENT
BUREAU OF ORDNANCE
Washington, D. C.

Jan. 19, 1921.

*Attention Dr. Van Doren.*

Dear Sir:

Mr. J. N. Zimmerman, Office of the Alien Property Custodian, under date of January 14th submitted to this Bureau a list of one hundred and sixty patents which have been assigned to the Chemical Foundation, Inc., the original of which list was forwarded on the same date to Dr. Van Doren at his personal request.

It will be appreciated if you will have an assignment made to the Navy Department for the United States Government of these one hundred and sixty patents without waiting for the completion of the full list of patents promised by Dr. Van Doren in a recent interview with the Bureau of Ordnance.

Copy of Mr. J. N. Zimmerman's letter of January 14th is inclosed herewith.

Very truly yours,
CHAS. B. McVAY, JR.,
*Rear Admiral, U. S. Navy,*
*Chief of the Bureau of Ordnance.*

1 inclos.
The Chemical Foundation, Inc.,
81 Fulton St.,
New York City.

**PLAINTIFF'S EXHIBIT No. 622.**

THE CHEMICAL FOUNDATION
81 Fulton Street,
New York City.

January 20, 1921.

Rear Admiral Chas. B. McVay, Jr.,
Chief of the Bureau of Ordnance,
Bureau of Ordnance,
Navy Department,
Washington, D. C.

in re: (S1)—O
ALB

Sir:

We beg to acknowledge receipt of your letter dated January 19, 1921, and in reply are pleased to inform you that an assignment covering the list of 160 patents forwarded to you by J. R. Zimmerman of the office of the Alien Property Custodian, will be immediately drawn up and placed in your hands at the earliest convenient date.

Yours very truly,

THE CHEMICAL FOUNDATION, INC.,
By LLOYD VAN DOREN.

LVD:ACK

**PLAINTIFF'S EXHIBIT No. 623.**

N. Ord. 6.
In Reply Address
Bureau of Ordnance, Navy Department
and Refer to No.
37649/2(S1)—O
ALB

NAVY DEPARTMENT
BUREAU OF ORDNANCE
Washington, D. C.

Feb. 17, 1921.

To: Bureau of Medicine and Surgery.

Subject: Purchase of License under Patents from the Alien Property Custodian.

Inclosure: (A) List of patents and copyrights transferred to the Chemical Foundation, Inc.
(Herewith)

(B) Copy of letter of Chem. Foundation of Jan. 17 to the Bureau of Ordnance.

1. Pursuant to an agreement between the Navy and War Departments and the Alien Property Custodian, the Navy Department through the Bureau of Ordnance has purchased a license under some five thousand eight hundred patents, which license has, together with a list of the patents so assigned, been deposited with the Bureau of Ordnance. A copy of this list is being made and will be forwarded upon its completion.

2. Attached hereto is a temporary list of patents and copyrights transferred to the Chemical Foundation, Inc., by the Alien Property Custodian and a copy of the letter of January 17 from the Chemical Foundation, Inc., in which the Chemical Foundation states that it will be pleased to assign to the War and Navy Departments a license to manufacture for their own use the improvements set forth in the patents contained in the aforesaid list.

3. If the Bureau of Medicine and Surgery will furnish the Bureau of Ordnance with a list of such patents selected from the accompanying pamphlet as it desires to have transferred, the Navy Department, Bureau of Ordnance, will include such list in its re-

quest for a blanket license to be issued to the War and Navy Departments.

4. An early statement of the license desired will be appreciated.

CHAS. B. McVAY, JR.,
*Chief of Bureau.*

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**PLAINTIFF'S EXHIBIT No. 623-A.**

DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY

125884(21)
ELS/T
February 25, 1921.

1st Endorsement.

To: Naval Medical Supply Depot, Brooklyn, N. Y.

Subject: Purchase of license under patents from the Alien Property Custodian.

Reference: Attached letter from Bureau of Ordnance, #(S1)—O February 17, 1921.

Enclosure: (A) List of patents and copyrights transferred to the Chemical Foundation, Inc.

(B) Copy of letter of Chemical Foundation of January 17, to the Bureau of Ordnance.

1. Forwarded for comment and recommendation; prompt return of all papers requested.

E. R. STITT.

**PLAINTIFF'S EXHIBIT No. 623-B.**

9 March 1921.

M-1-13-ESB-MJB
2nd Endorsement
From: The Commanding Officer, Naval Medical Supply Depot, Brooklyn, N. Y.
To: The Chief of the Bureau of Medicine and Surgery.
Subject: Purchase of license under patents from the Alien Property Custodian.
Enclosure: (a) List of patents and copyrights transferred to the Chemical Foundation, Inc.
(b) Copy of letter of Chemical Foundation of 17 January 1921 to the Bureau of Ordnance.
(c) List of Patents.

1. Returned

2. Enclosure (C) is a list of the patents which it is believed might be of use to the Medical Department. What merits these patents have is not revealed in the title, many of them possibly having no value. On the other hand, there are possibly a large number omitted from the list which would be of value, but such value or utility is not indicated by the title.

3. It is impossible for this Depot to determine from the information at hand if any of the patents relating to dyes or their manufacture would have a value to the Medical Department of the Navy, so none of these have been included in the list.

4. The character of articles used in the Medical Department is so diverse that it is possible that a very large part of the patents given in the list sub-

mitted by the Bureau of Ordnance would apply in the manufacture of articles used in the medical Department. As this Depot is not familiar with the full details of manufacture of all classes of goods, the list as given is as complete as it is possible to prepare.

5. If a blanket license is to be obtained for the War and Navy Departments, any patents of value to the Medical Department omitted from enclosure (c) would be covered.

E. S. BOGERT.

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**PLAINTIFF'S EXHIBIT No. 623-C.**

ELS-DRG

125884 (21)

3rd Endorsement

11 March 1921

Bureau of Medicine and Surgery.

To: Bureau of Ordnance.

Subject: Purchase of license under patents from the Alien Property Custodian.

Reference: Your attached letter dated 17 February 1921

Enclosures: (a) List of patents and copyrights transferred to the Chemical Foundation, Inc.

(b) Copy of letter of Chemical Foundation, dated 17 January 1921, addressed to the Bureau of Ordnance.

(c) List of patents to be included by the Bureau of Ordnance in its request for a blanket license to be issued to the War and Navy Departments.

1. As requested in your letter, ref., the Bureau is enclosing herewith, encl. (c), a list of patents selected from encl. (a), that it desires to have the Bureau of Ordnance include in its request for a blanket license to be issued to the War and Navy Departments.

J. A. MURPHY,
*Acting.*

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**PLAINTIFF'S EXHIBIT No. 624.**

THE CHEMICAL FOUNDATION
81 Fulton Street,
New York City.

March 28, 1921.

Mr. Chas. B. McVay, Jr.,
Rear Admiral, U. S. Navy,
Chief of the Bureau of Ordnance,
Navy Department,
Washington, D. C.

Re: Communication No. 37649/6 (S1)-O

Sir:

It is desired to acknowledge receipt of your letter dated March 24, 1921, and enclosure of letter from the War Department dated March 19, 1921.

In reply it is desired to state that The Chemical Foundation, Inc., will be pleased to comply with the request of the Navy and War Departments with respect to granting to the War and Navy Departments, as represented by the Secretary of the Navy and his successors in office, a license covering all of the patents which have been transferred to The Chemical Foundation by the Alien Property Custodian, excepting only, of course, those patents which have already been licensed in an instrument dated February 26, 1921, and such license will be prepared at the earliest possible moment. The War and Navy Departments will undoubtedly realize that the preparation of a license

which will include a schedule of several thousand patents, is a rather laborious and time consuming procedure, and it is hoped hence that the said Departments will bear with the Foundation until the license can be properly prepared.

It is noted in the letter from the War Department that a request is made for 100 copies of a list of patents owned by The Chemical Foundation, Inc. There was prepared shortly after the incorporation of the Chemical Foundation, a temporary list of patents. This temporary list has been exhausted and a new list is in the course of preparation at the present time, but we are unable to say just when such list will be completed.

According to the present plans of the writer, he expects to be in Washington within about 10 days or two weeks, and he will be pleased to confer with you at that time concerning the license and the 100 copies of the list of patents, should it be possible for you to arrange for a conference.

Yours very truly,
THE CHEMICAL FOUNDATION,
INCORPORATED,
By LLOYD VAN DOREN.

LVD:ACK

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**PLAINTIFF'S EXHIBIT No. 625.**

THE CHEMICAL FOUNDATION
81 Fulton Street,
New York City.

July 19, 1921.

Commander A. L. Norton,
General Inspector of Ordnance,
Bureau of Ordnance,
Navy Department,
Washington, D. C.
Dear Sir:

Undoubtedly you are wondering what has ha

pened to the License which the Chemical Foundation stated it was willing to grant to the United States Government as represented by the Secretary of the Navy. I may say that this work was held up in view of a thorough checking and rechecking of our list of patents.

This work has now been completed and a revised list of Patents owned by The Chemical Foundation has been issued. Hence, I am proceeding at once with the preparation of a License, extending to the Government a privilege to use any of the inventions covered by the Patents owned by The Chemical Foundation.

You will undoubtedly recall that in a communication from the War Department a request was made for one hundred (100) copies of a list of patents owned by The Chemical Foundation. I regret very much that owing to a limited supply of these lists, it will not be possible to forward one hundred (100) copies. However, I am forwarding to you under separate cover ten (10) copies of the list and will appreciate it greatly if some of these may be passed on to the War Department for their information.

I might add, that if it should seem highly desirable that a few additional copies be forwarded, this detail could probably be arranged

Thanking you very much for the keen appreciation which you have shown in connection with the difficulties pertaining to the preparation of the license, and hoping that we may be able to place the license in your hands in the very near future, we beg to remain

Very truly yours,

THE CHEMICAL FOUNDATION,
INCORPORATED,

By LLOYD VAN DOREN.

LVD:ACK

**PLAINTIFF'S EXHIBIT No. 626.**

LAW OFFICES,
PALMER, DAVIS AND SCOTT
220-7 Munsey Building
Washington, D. C.

December 15, 1921.

Chief, Bureau of Ordnance,
Navy Department,
Navy Building, Washington, D. C.

*Attention: Commander Norton*

Sir:

Referring to the correspondence heretofore had between your Bureau and The Chemical Foundation, Inc., relative to a license from The Foundation to the Government covering Letters Patent owned by it, we wish to respectfully advise that we have today delivered personally to Commander Norton duplicate originals of a proposed release and license executed by The Foundation, prepared for acceptance by The Secretary of the Navy on behalf of the Government.

We would be pleased to confer with you or such officers as you may suggest relative to this matter, if the same is desired. Otherwise, if the release and license meets with the approval of The Secretary of the Navy, we wish you would kindly return one of the duplicate originals as executed by him to this office.

Respectfully yours,
PALMER, DAVIS & SCOTT.

SMS/p

**PLAINTIFF'S EXHIBIT No. 627.**

N. Ord. 6.
In Reply Address
Bureau of Ordnance, Navy Department
and Refer to No.
37649/18 (S1)-O
ALB

NAVY DEPARTMENT
BUREAU OF ORDNANCE
Washington, D. C.

January 19, 1922.

*Attention Mr. Stellwagon*

Subject: Acceptance by Department of License from the Chemical Foundation, Inc., covering letters patent owned by it.

Reference: (a) Your letter of December 15, 1921, to the Bureau of Ordnance.

Enclosure: (A) Copy of license.

Gentlemen:

There is forwarded herewith, duplicate of release from the Chemical Foundation which has been accepted by the Navy Department.

In order that the original release may be properly recorded in the Patent Office, it is requested that the list of patents licensed thereunder be sent to the Bureau of Ordnance at as early a date as practicable and that the same be properly attested by the Secretary of the Chemical Foundation as accompanying the license of November 17, 1921.

Very truly yours,

CHAS. B. McVAY, JR.,
*Rear Admiral, U. S. Navy,*
*Chief of Bureau of Ordnance.*

A. L. NORTON,
*Commander, U. S. Navy,*
By direction.

Palmer, Davis and Scott,
220 Munsey Building,
Washington, D. C.

**PLAINTIFF'S EXHIBIT No. 628.**

Law Offices
PALMER, DAVIS AND SCOTT
220-7 Munsey Bldg.,
Washington, D. C.

January 21, 1922.

Hon. Chas. B. McVay,
Rear Admiral, U. S. Navy,
Chief of Bureau of Ordnance,
Navy Department, Washington, D. C.
Your No. 37649/18-(S1)-O ALB.

*Attention A. L. Norton, Commander, U. S. N.*

Dear Sir:

We wish to acknowledge receipt of your letter dated January 19, 1922, inclosing duplicate original of release and license from the Chemical Foundation to the United States Government. We have carefully noted the remarks made in the second paragraph of your letter and are calling the same to the attention of The Foundation.

Very truly yours,
PALMER, DAVIS and SCOTT.

SMS/p

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**PLAINTIFF'S EXHIBIT No. 629.**

Law Offices
PALMER, DAVIS AND SCOTT
220-7 Munsey Bldg.,
Washington, D. C.

June 3, 1922.

Rear Admiral Chas. B. McVay, Jr.,
Chief, Bureau of Ordnance,
Navy Department,
Washington, D. C.

*Attention of Commander A. L. Norton, U. S. N.*
Your No. 37649/18-(S1)-O ALB.

Dear Sir:

At the request of the Chemical Foundation, Inc., we herewith transmit to you Schedules A, B, C, D and E, which are to accompany the Release and License issued by it to the Government of the United States of America; each of said Schedules being signed by Mr. George J. Corbett, Secretary of the Chemical Foundation, Inc., in accordance with the provisions of the said Release and License.

Very truly yours,
PALMER, DAVIS and SCOTT.

SMS R

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**PLAINTIFF'S EXHIBIT No. 630.**

Statement of Col. Thomas W. Miller, Alien Property Custodian, before Committee on Interstate and Foreign Commerce.

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STATEMENT OF COL. THOMAS W. MILLER, ALIEN PROPERTY CUSTODIAN

MR. MILLER. Mr. Chairman and members of the committee, if it meets with the pleasure of the chairman and the members of the committee, I would request that I be permitted, in a very few moments to briefly outline the purposes of this bill as we see it; and if it suits your pleasure, Mr. Chairman and gentlemen, that I be not interrupted for a few moments, so that I can make a connected and general statement.

If that meets your pleasure then, Mr. Chairman and gentlemen of the committee, I shall proceed along that line.

THE CHAIRMAN. We shall hope that the members of the committee will restrain their interest in the matter as you desire, but it is not guaranteed.

MR. MILLER. The bill which the chairman has referred to is the result of a number of months' study and consideration of the alien property situation which has developed since the establishment of peace and peace-time relations between the United States and the former powers with which she was at war.

Under the original trading with the enemy act, with which you gentlemen are undoubtedly familiar, the property belonging to enemy nationals, such as Germans, Austrians, and Hungarians, was seized and held by the Alien Property Custodian after the trading with the enemy act passed, on October 6, 1917. In addition thereto, under the provisions of that law, which were specific, property in this country was seized by the Alien Property Custodian belonging to people of other nationalities, who, at the time of war between the United States and the enemy Governments, were residing or abiding in the territories of the countries with which we were at war. I mention that because a considerable misunderstanding has been created, and rightfully so, as to why a number of people who are American citizens, or who claim to be American citizens, have had their property sequestered by the Alien Property Custodian, and in some cases under the law today we are unable to return it.

Briefly stated, the approximate amount of property taken over under the first Alien Property Custodian, Mr. A. Mitchell Palmer, amounted, in round figures, to $600,000,000. You have heard the figures, $800,000,000, and millions are juggled around in talking about this alien property as if they were dollars. With respect to the office, generally speaking, it is impossible to estimate accurately, within several millions, as to what this property is worth from day to day, or was worth when we took it over. Your Government, through the Alien Property Custodian's office, is administering probably the largest bank and

trust company in the world. This property consists today of about 31,000 active accounts. I shall refer to them as trusts. Every piece of property seized was given a trust number. In a number of trusts there are more than one person participating. And this consists of property scattered from the Philippine Islands and Hawaii to the coast of New England, consisting of industrial plants, such as chemical and woolen mills, steamship lines, banks, land and cattle companies, salmon factories, gold, silver, and other precious mines of metal, and other miscellaneous industrial plants, to say nothing of thousands of parcels of real estate and trusts represented by securities and liquid assets.

We are holding that property in accordance with the provisions of the trading with the enemy act, which says it shall be held until such time as Congress shall direct disposition thereof. Under the Knox-Porter peace resolution, which brought about a state of peace between the former enemy powers and the United States, which was signed July 2, 1921, we find, in section 5, words to this effect: "That all property belonging to the nationals of these former enemy powers shall be held by the United States and no disposition thereof made, except such as shall have been heretofore or hereafter specifically provided by law, until such time as the Imperial German Government and the Imperial and Royal Austro-Hungarian Government, or their successor or successors, shall have, respectively, made suitable provision for the satisfaction of all claims against such Government," etc.

I mention that not in any way to encroach upon the duties of the Department of State and the Mixed Claims Commission, which is now operating, but in order that in a discussion of this bill I may be the more readily understood. In theory this property is

awaiting such disposition as the Congress cares to make of it.

On the one side there are those who advocate the immediate return of all property, and without further delay, on the other side are those who advocate the retention of this property and the immediate utilization of that property for the payment of the claims of American citizens as they are adjudicated and awards made by the Mixed Claims Commission.

I am not here to discuss the international phase of the situation, nor to go into a detailed discussion of the law on that point. It is maintained by some that under the treaty of Versailles, those portions in which the United States participates, as well as under our treaty with Germany, Austria, and Hungary, we could today proceed to liquidate this alien property and pay these claims as they are adjudicated. On the other hand, this administration, as well as previous ones, has made no secret of the fact that as a Nation we are opposed to the confiscation of property of private citizens to pay the debts of the Imperial German Government or of the Imperial and Royal Austro-Hungarian Government. Nevertheless, under our resolution, to which I have referred, and our treaties with those countries, we have no other recourse at the present time but to hold this property as a guarantee—using the language of the resolution—until such time as these claims are adjudicated.

Now, to depart briefly and to give merely what I understand personally, it is said there will be probably a billion dollars' worth of claims filed with the Mixed Claims Commission against Germany and Austro-Hungary. That seems like a large sum of money. All precedents show that all war claims, in past wars, were settled on a basis of about 8 per cent. If that is carried out in an adjudication of these claims the settlements would amount to $80,000,000. Not that

I adhere to this principle, but you will find, if you look over the records of past wars, that loss of life has been settled at a 2 per cent. percentage. So in the case of our $190,000,000 of claims against Germany for losses of life on the high seas, if we go by any precedents in the past, they are to be considerably boiled down. The distinguished Senator from Alabama, Senator Underwood, asked me if I approved of the settlement of the *Lusitania* claims on a basis of 2 per cent. I told him, and I say the same to this committee, we are not governed by our feelings in this matter, but by past usages and precedents and what laws you gentlemen pass in Congress. I thought I would throw that in personally, because I touched upon the Mixed Claims Commission here today.

Now, this bill we are discussing drives down the middle of the road between those two angles that I have outlined heretofore. In our office we are the recipients of hundreds of the most pathetic appeals that anyone could receive. When you have several thousands of unwilling depositors, in this institution which I have compared to a trust company, you can well understand why they ask the question as to why they do not receive their property back, when we have been almost four years at peace, in theory, at least. And thousands of these people who have been connected with America are interested by their investments over here which we have seized and they have their friends and relatives in this country, and they, in turn, as you know, bombard you Members of Congress with queries which have been very difficult to answer or understand, as to why this property has not been returned to them four years after the armistice.

We, therefore, considered a way to temporarily, at least, handle the situation. We have suggested that all those amounts or trusts held by the Alien

Property Custodian of the value of $10,000 and under be returned to the people from whom the property was taken. That was just a dead line that was drawn by those of us who were considering the proposition.

Today, in the Alien Property Custodian's office, there are 30,368 active trusts. That represents generally more than 30,000 people—many more. There are 28,144 trusts of those active trusts, that are of a value of $10,000 and under. The average value of them is about $784. There are 2,224 trusts of the value of $10,000 and over.

Now, in arriving at the figures that I will give you, let me explain again that we can not state specifically, within perhaps several millions of dollars, what the return of property would amount to if this bill were enacted into law. It would take a lot of money and expert bookkeeping and accounting and far more personnel than I am allowed in the office to have a ledger every day showing just what every one of those accounts was worth. We have every conceivable character of stock or bond or mortgage that we are holding, and it would mean running over the quotations from the stock exchanges in the New York papers every day and multiplying the quotations by the number of stocks or bonds, etc., to say what it amounts to. It fluctuates so. But taking these figures, and our experience for what it is worth, if you returned all the trusts of $10,000 and under, it would amount to approximately $22,122,000.

It is only right and proper, and would probably be necessary to make the law just, at the same time we are returning the trusts under $10,000, to return $10,000 out of every trust of the value of $10,000 and over, and that would add an additional $22,240,000. So that today, the only accurate estimate I can give you of what this $10,000 return would take from the office is that it amounts to approximately $44,362,000.

The approximate value of the alien property on hand November 30, 1922, exclusive of any vessels, carried on the books at $34,000,000, was $347,310,000.

I have here, Mr. Chairman, a statement of the cash and assets on hand, as well as claims paid, on various dates. It is brought up to date, and is similar to a table I inserted during the hearings before the Senate Committee on the Judiciary on Senator Underwood's bill. It shows the various items of cash and other assets on hand, and claims paid, at the termination of the tenure of office of A. Mitchell Palmer as Alien Property Custodian on March 4, 1919; and also a similar statement at the termination of the tenure of office of Francis P. Garvan as Alien Property Custodian on March 16, 1921, and similar information with respect to the office under the present administration as of July 15, 1922, and as of November 29, 1922. With your permission, Mr. Chairman and gentlemen, I would like to insert this in my remarks on this point.

The CHAIRMAN. Without objection, it may go in.

(The statement referred to is as follows:)

Statement of cash and assets on hand and claims paid on various dates, submitted by Thomas W. Miller, Alien Property Custodian.

| | Mar. 4, 1919.[1] | Mar. 16, 1921.[2] | July 15, 1922. | Nov. 29, 1922. |
|---|---|---|---|---|
| Cash deposited with the Secretary of the Treasury: | | | | |
| Invested | $77,068,873.62 | $160,128,081.17 | $164,375,655.73 | $169,797,869.28 |
| Uninvested | 9,568,587.02 | 10,397,151.17 | 6,214,528.66 | 5,047,314.38 |
| Total cash | 86,637,460.64 | 170,525,232.34 | 170,590,184.39 | 174,845,183.66 |
| Cash with depositaries | 1,008,453.99 | 805,366.73 | 437,588.24 | 1,013,855.48 |
| Stocks | 166,501,790.05 | 88,040,656.00 | 72,351,870.95 | 69,833,509.16 |
| Bonds, other than investments made by Secretary of the Treasury | 60,926,044.86 | 55,367,184.04 | 51,190,218.92 | 50,232,028.77 |

| | Mar. 4, 1919.[1] | Mar. 16, 1921.[2] | July 15, 1922. | Nov. 29, 1922. |
|---|---|---|---|---|
| Mortgages ..... | $12,645,708.62 | $8,312,066.38 | $5,668,451.70 | $5,406,773.30 |
| Notes receivable | 5,778,330.53 | 1,714,231.14 | 949,469.09 | 611,327.64 |
| Accounts receivable ..... | 41,018,850.21 | 15,825,353.33 | 10,165,412.14 | 9,948,615.89 |
| Real estate .... | 10,456,200.74 | 7,671,492.87 | 5,138,490.33 | 5,018,499.72 |
| Miscellaneous incoporated businesses and estates in liquidation and remainderman accounts ..... | 88,637,127.69 | 56,340,765.72 | 30,401,224.52 | 30,400,982.60 |
| | 473,609,967.33 | 404,602,348.55 | 346,892,910.28 | 347,310,776.22 |
| Claims paid to date ..... | 1,468,347.18 | 129,515,453.23 | 199,452,540.76 | 203,699,155.68 |
| Total property accounted for | 475,078,314.51 | 534,117,801.88 | 546,345,451.04 | 551,009,931.90 |
| Enemy vessels (an item carried on the books of the Alien Property Custodian of property not subject to his control) ..... | 34,193,690.00 | 34,193,690.00 | 34,193,690.00 | 34,193,690.00 |

[1] Termination of A. Mitchell Palmer's tenure of office as Alien Property Custodian.

[2] Termination of Francis P. Garvan's tenure of office as Alien Property Custodian.

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## PLAINTIFF'S EXHIBIT No. 631.

RELEASE BY THE CHEMICAL FOUNDATION, INC., TO THE ALIEN PROPERTY CUSTODIAN OF ALL ITS RIGHTS, TITLE AND INTEREST IN AND TO CERTAIN PATENTS AND TRADEMARKS

(1) WHEREAS, Francis P. Garvan, as Alien Property Custodian, did on the 10th day of April, 1919, during his incumbency of said office of Alien Property Custodian, transfer and assign to The Chemical Foun-

dation, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, all right, title and interest in and to certain Letters Patent of the United States; and

(2) WHEREAS, as evidence of said transfer and assignment, the said Francis P. Garvan, as Alien Property Custodian, did deliver, during his incumbency of said office of Alien Property Custodian, to the said The Chemical Foundation, Inc., a duly executed instrument of assignment bearing date of April 10th, 1919, and did therein recite certain Letters Patent of the United States, all right, title and interest in and to which were thereby stated to be transferred and assigned to the said The Chemical Foundation, Inc., for the consideration specified in said instrument of assignment, which said instrument of assignment was thereafter, on the 21st day of April, 1919, recorded in the United States Patent Office in Liber Y-107, page 1; and

(3) WHEREAS, in confirmation and ratification of the aforesaid instrument of assignment, said Francis P. Garvan, as Alien Property Custodian, did deliver, during his incumbency of said office of Alien Property Custodian, to The Chemical Foundation, Inc., a duly executed instrument bearing date of March 1st, 1921, which said instrument of confirmation and ratification was thereafter, on the 3rd day of March, 1921, recorded in the United States Patent Office in Liber Q-112, page 301; and

(4) WHEREAS, It now appears that the two certain Letters Patent of the United States more particularly specified and described in paragraph seven (7) hereof, were by mistake and through inadvertence and without the intent and contemplation of the parties to said instruments and without agreement or consideration for the transfer or assignment thereof, in-

cluded in said recital of said instrument of assignment bearing date of April 10th, 1919; and

(5) WHEREAS, it is the desire and intention of the present incumbent of the said office of Alien Property Custodian and the desire and intention of the said The Chemical Foundation, Inc., to correct the said mistake; and

(6) WHEREAS, Thomas W. Miller was, on the 16th day of March, 1921, duly appointed and thereafter duly qualified as, and now continues to be the present incumbent of said office of, Alien Property Custodian, in succession of the said Francis P. Garvan;

(7) NOW, THEREFORE, in consideration of the premises and the sum of One (1) Dollar, lawful money of the United States by each to the other in hand paid, the receipt whereof is hereby acknowledged, it is agreed by and between the said Thomas W. Miller, as Alien Property Custodian, and the said The Chemical Foundation, Inc., that the said instrument of assignment from the said Francis P. Garvan, as Alien Property Custodian to the said The Chemical Foundation, Inc., bearing date of April 10th, 1919, shall be amended by striking therefrom all reference to the following patents:

| *Patent No.* | *Date of Issue* | *Title.* |
|---|---|---|
| 912,352 | February 16, 1909. | Objective. |
| 1,108,307 | August 25, 1914. | Spherically chromatically astigmatically and comatically corrected double objective. |

and that the said instrument of confirmation and ratification bearing date of March 1st, 1921, shall, so far

as it relates to said instrument of assignment of April 10th, 1919, be construed to confirm said instrument of assignment of April 10th, 1919, as thus amended; and the said The Chemical Foundation, Inc., does for itself and its successors and assigns hereby release and forever quitclaim any right, title and interest, real or apparent, in and to the said Letters Patent of the United States specified in this paragraph seven (7) hereof in favor of the said Thomas W. Miller, as Alien Property Custodian, his successors in office and assigns.

IN WITNESS WHEREOF the said Thomas W. Miller, as Alien Property Custodian, has set his hand and caused his seal of office to be affixed hereto; and the said The Chemical Foundation, Inc., has caused these presents to be signed and its corporate seal to be hereunto affixed by its duly authorized officers this 11th day of April, 1922.

.....
*Alien Property Custodian.*

THE CHEMICAL FOUNDATION, INC.
By (Sgd.) FRANCIS P. GARVAN,
*President.*

Attest:
(Sgd.) GEO. J. CORBETT,
(Seal) *Secretary.*

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**PLAINTIFF'S EXHIBIT No. 631-A.**

June 9, 1922.

Hon. Thomas W. Miller,
War Risk Building,
Washington, D. C.

In re: Reassignment of Patents
912,352 and 1,108,307

Sir:

On April 11, 1922, there were forwarded two (2)

copies of a release from the Chemical Foundation, Inc., to the Alien Property Custodian, of all rights previously transferred to the Chemical Foundation by the Alien Property Custodian.

The release having been drawn in duplicate, each copy to be considered as an original, it was requested that upon the acceptance of the same one copy be returned to the Chemical Foundation.

In a letter dated May 4, 1922, signed by J. R. Zimmerman, we were informed that the release had been forwarded to the Bureau of Law for consideration, and since we have not been advised further, it will be appreciated if we may now be informed as to the present status of the proposed transfer.

Respectfully,
THE CHEMICAL FOUNDATION,
INCORPORATED.
By (Sgd.) LLOYD VAN DOREN.

LVD:ACK

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**PLAINTIFF'S EXHIBIT No. 631-B.**

(Copy)
ALIEN PROPERTY CUSTODIAN
16th and P Streets, NW.
Washington, D. C.

Trust No. 12247
Report No. 35119

May 4, 1922.

The Chemical Foundation, Inc.,
81 Fulton Street,
New York City.

*Attention: Dr. Van Doren*

Gentlemen:

Replying to your letter of May 3, in regard to the release covering Patents 912,352 and 1,108,307, I beg

to advise that this release was received about April 12, and forwarded to the Bureau of Law for the Custodian's acceptance.

Just at this time the entire department was packing, preparatory to moving to the new quarters, and undoubtedly action on this release was delayed for this reason.

I will take this matter up at once, and have your copy of release forwarded as soon as executed.

Yours very truly,

(Sgd.) J. R. ZIMMERMAN,
*Patent Section.*

JRZ/ams

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**PLAINTIFF'S EXHIBIT No. 631-C.**

May 4, 1922.

To: Mr. W. W. Wilson, General Counsel.
From: Mr. Zimmerman, Patent Section.

Attached is a letter from the Chemical Foundation in regard to a release or quit-claim covering Patent Nos. 912,352 and 1,108,307.

In checking our patents it was found these two patents had been assigned to the Chemical Foundation on April 10, 1919, and also assigned to Merten E. Grush on June 8, 1920. In other words these two patents had been sold and assigned twice.

As it was impossible to get Merten E. Grush to release these patents, under direction of the Custodian I succeeded in getting a quit-claim from the Chemical Foundation.

This quit-claim was received on April 12, and forwarded to the Bureau of Law for approval, as it required the signature of the Custodian as well as the Chemical Foundation.

The two copies of this quit-claim have not been returned to me, and I will appreciate it if you will take this matter up as promptly as possible, as I am anxious to have this adjusted before I leave.

JRZ/ams

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**PLAINTIFF'S EXHIBIT No. 631-D.**

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THE
CHEMICAL FOUNDATION
INCORPORATED
81 Fulton Street
New York City

Francis P. Garvan
President

Vice-President
George J. Corbett
Treasurer
Joseph H. Choate, Jr.
General Counsel
Ramsay Hoguet
Patent Counsel

Trustees
Otto T. Bannard, Chairman
Cleveland H. Dodge
George L. Ingraham
B. Howell Griswold, Jr.
Bradley W. Palmer

Cable Address
Chemfound

Refer to

April 11, 1922.

Mr. J. R. Zimmerman,
Office of Alien Property Custodian,
16th and P Streets, NW.,
Washington, D. C.

In re: Patent #912,352, 1,108,307

My dear Mr. Zimmerman:

I am enclosing herewith two (2) copies of a release by the Foundation to the Custodian of all of its right, title and interest in and to the Patents above identified.

The release has been drawn in duplicate because of certain features pertaining to the transfer and confirmation of the patents, and if you will kindly have the Custodian sign and seal the two copies, retaining one for the Custodian's file and returning the other to me, I shall appreciate it very much.

This release, we believe, will satisfy the situation

surrounding the patents. An abstract of title which we have had made shows the title is now residing in the Foundation and does not show any other transfer by the Custodian. Hence I would suggest, although undoubtedly it is superfluous, that the present release be made a matter of record in the Patent Office.

Very truly yours,

(Sgd.) LLOYD VAN DOREN.

LVD: ACK
Encs.

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**PLAINTIFF'S EXHIBIT No. 631-E.**

THE
CHEMICAL FOUNDATION
INCORPORATED
81 Fulton Street
New York City

Francis P. Garvan
President

Vice-President
George J. Corbett
Treasurer
Joseph H. Choate, Jr.
General Counsel
Ramsay Hoguet
Patent Counsel

Trustees
Otto T. Bannard, Chairman
Cleveland H. Dodge
George L. Ingraham
B. Howell Griswold, Jr.
Bradley W. Palmer

Refer to

Cable Address
Chemfound

March 29, 1922.

Mr. J. R. Zimmerman,
Office of Alien Property Custodian,
Washington, D. C.

In re: patents #912,352, 1,108,307

Dear Mr. Zimmerman:

The copies of the License given by the Custodian to the C. P. Goerz American Optical Company and the assignment to Merton E. Grush containing the two patents above mentioned, are at hand and I wish to thank you very much for having these copies prepared and for forwarding them to me.

They will undoubtedly be of material assistance in clearing up the situation concerning these patents.

There does not seem to be any immediate circumstance which will bring me to Washington, and it will probably be some time in the month of May until I will again make a trip. However, if something comes up in the meantime, you may rest assured that I will let you know my plans.

Extending our best wishes and kind personal regards to Mrs. Z. and yourself, I remain,

Very sincerely,

(Sgd.) LLOYD VAN DOREN.

LVD:ACK

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**PLAINTIFF'S EXHIBIT No. 631-F.**

March 28, 1922.

The Chemical Foundation, Inc.,
81 Fulton Street,
New York City.

*Attention: Dr. Van Doren*

Gentlemen:

Replying to your letter of March 26th, in regard to the assignment from the Alien Property Custodian to Grush, covering Patent Nos. 912,352 and 1,108,307.

I am enclosing a copy of the assignment and also a copy of a license covering the same Patents given to C. P. Goerz American Optical Company.

This license was merely given to protect the Goerz American Optical Co., from infringement suits which might arise from the use of the Patents while held by the Alien Property Custodian, and I am simply sending it to you in order that you may have a complete record.

If I can be of any additional service to you in this matter, kindly call on me.

Whenever you are contemplating coming to Washington, let me know.

Yours very truly,
(Sgd.) J. R. ZIMMERMAN,
*Patent Section.*

JRZ/ams

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**PLAINTIFF'S EXHIBIT No. 631-G.**

THE
CHEMICAL FOUNDATION
INCORPORATED
81 Fulton Street
New York City

Francis P. Garvan
President

Vice-President
George J. Corbett
Treasurer
Joseph H. Choate, Jr.
General Counsel
Ramsay Hoguet
Patent Counsel

Trustees
Otto T. Bannard, Chairman
Cleveland H. Dodge
George L. Ingraham
E. Howell Griswold, Jr.
Bradley W. Palmer

Refer to

Cable Address
Chemfound
March 26, 1922.

Mr. J. R. Zimmerman,
Office of the Alien Property Custodian,
Washington, D. C.

Dear Mr. Zimmerman:

We rather feel in connection with the consideration of quitclaiming to the Custodian Patents #912,352 and 1,108,307, that the assignment from the Custodian to Grush dated June 8, 1920, may be of assistance to us, and therefore if it may be so permitted, we will appreciate it very much if you will kindly send us a copy of this assignment.

With always best wishes, I remain,

Very truly yours,
(Sgd.) LLOYD VAN DOREN,
Per ACK.

LVD:ACK

**PLAINTIFF'S EXHIBIT No. 631-H.**

March 16, 1922.

The Chemical Foundation, Inc.,
81 Fulton Street,
New York City.

*Attention: Dr. Van Doren*

Gentlemen:

Referring to your letter of March 13, and mine of March 15, in regard to Patents 912,352 and 108,307, I beg to advise that I have just been authorized by the Alien Property Custodian to accept from the Chemical Foundation a quit-claim covering the two Patents mentioned, and to execute a new assignment tc Merten E. Grush in order to adjust this duplication in assignments.

As stated in my letter of March 15, it will not be necessary to consider the license issued to the Government, as the sale to Grush was made subject to this license and the assignment, of course, would be executed subject to it.

Yours very truly,
(Sgd.) J. R. ZIMMERMAN,
*Patent Section.*

JRZ/ams

**PLAINTIFF'S EXHIBIT No. 631-I.**

March 15, 1922.

To: Col. Thomas W. Miller.
From: Mr. Zimmerman, Patent Section.

Several months ago, it was discovered that Patents #912,352 and 1,108,307 had been sold and assigned to the Chemical Foundation, Inc., on April 10, 1919, and also sold and assigned to Merten E.

Grush, the purchaser of the C. P. Goerz American Optical Company, on June 8, 1920.

At the time this was discovered, I took the matter up with the Chemical Foundation, and suggested the return of these two patents to the Alien Property Custodian, in order that some adjustment might be made, and recently the Chemical Foundation has expressed a willingness to quit-claim to the Alien Property Custodian these two patents.

Am I authorized to accept from the Chemical Foundation this quit-claim, and to execute to Merten E. Grush a new assignment in order that a perfect title may be conveyed to him? As matters now stand, the title is vested in the Chemical Foundation, and if it quit-claims to the Custodian, title will be vested in the Custodian, and not in Grush, the purchaser.

JRZ/ams

O.K.
M
3/15/22

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**PLAINTIFF'S EXHIBIT No. 631-J.**

March 15, 1922.

The Chemical Foundation, Inc.,
81 Fulton Street,
New York City.

*Attention: Dr. Van Doren*

Gentlemen:

Replying to your letter of March 17, in regard to Patent Nos. 912,352 and 1,108,307, it is my opinion that the best way to handle this, would be for the Chemical Foundation to quit-claim these two patents to the Alien Property Custodian, and have him reassign them to Merten E. Grush.

The license to the United States Government is not really connected with this transfer, as the assign-

ment to Merten E. Grush was subject to the license already issued to the Government.

Under present conditions, I do not feel that I am authorized to suggest this adjustment, but have today referred the whole question to Colonel Miller, requesting from him his authority to make the adjustment, and as soon as I receive a ruling on this, I will let you hear from me.

Yours very truly,
(Sgd.) J. R. ZIMMERMAN.
*Patent Section.*

JRZ/ams

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**PLAINTIFF'S EXHIBIT No. 631-K.**

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THE
CHEMICAL FOUNDATION
INCORPORATED
81 Fulton Street
New York City

Francis P. Garvan
President

Vice-President
George J. Corbett
Treasurer
Joseph H. Choate, Jr.
General Counsel
Ramsay Hoguet
Patent Counsel

Trustees
Otto T. Bannard, Chairman
Cleveland H. Dodge
George L. Ingraham
B. Howell Griswold, Jr.
Bradley W. Palmer

Refer to

Cable Address
Chemfound
March 13, 1922.

Mr. J. R. Zimmerman,
1307 Shephard Street, NW.,
Washington, D. C.

My dear Mr. Zimmerman:

You will recall that some time ago you called attention to the fact that Patents No. 912,352, and 1,108,307 which were assigned to the Foundation on April 10, 1919, had also been licensed to the Government on April 3, 1920, and that they had also been sold along with the other assets of the C. P. Goerz American Optical Company and assigned to Merten E. Grush on June 8, 1920.

Further, the question was raised whether Mr. Garvan would quitclaim these patents to Grush. The situation was presented to Mr. Corbett in a memorandum and he has requested Mr. Haaren to look into it and see what can best be done to straighten out the situation, and he raised the question as to what your thoughts are relative to a plan of procedure.

It would appear that the license to the Government would have to be considered, probably obtaining from the Government a quitclaim for the rights transferred to it in the license of April 3, 1920, then if the Foundation should also quitclaim to the Custodian rights transferred to it in the assignment of April 10, 1919, the Custodian's title would be unhampered and a new, in the nature of a corrective assignment, to Mr. Grush should clear the record and give to Grush the title which of course he does not have at the present time.

Undoubtedly Grush does not realize that he obtained nothing with respect to the two patents hereinbefore mentioned, inasmuch as the question of ownership has not been raised by him and in reality he can have no basis for a claim since the prior title resides in the Foundation.

I recall that when you were speaking of this matter last, it was your thought that there was little likelihood of any immediate embarrassment being caused the Office of the Custodian, but that there might possibly arise a controversy due to the double assignment of the patents. From what Mr. Haaren has said I judge the Foundation stands ready to assist in straightening out the situation in every way possible, and hence if you will kindly grant us your thoughts with respect to the same it will be appreciated.

Very truly yours,
(Sgd.) LLOYD VAN DOREN.

LVD:ACK

**PLAINTIFF'S EXHIBIT No. 631-L.**

THE
CHEMICAL FOUNDATION
INCORPORATED
81 Fulton Street
New York City

Francis P. Garvan
President

Vice-President
George J. Corbett
Treasurer
Joseph H. Choate, Jr.
General Counsel
Ramsay Hoguet
Patent Counsel

Trustees
Otto T. Bannard, Chairman
Cleveland H. Dodge
George L. Ingraham
B. Howell Griswold, Jr.
Bradley W. Palmer

Refer to

Cable Address
Chemfound
December 13, 1921.

Mr. J. R. Zimmerman,
Office of Alien Property Custodian,
16th and P Streets NW.,
Washington, D. C.

Dear Mr. Zimmerman:

The question of quitclaiming Patents Nos. 912,352 and 1,108,307, assigned to The Chemical Foundation Incorporated April 10, 1919, and subsequently sold along with the other assets of the C. P. Goerz American Optical Company, and assigned to Merten E. Grush, the purchaser of that company, under an assignment dated June 8, 1920, has been referred to Mr. Garvan through Mr. Corbett, and as soon as I have any knowledge pertaining to this question I shall be pleased to transmit the same to you at once.

Very truly yours,

(Sgd.) LLOYD VAN DOREN.

LVD:ACK

**PLAINTIFF'S EXHIBIT No. 631-M.**

THE
CHEMICAL FOUNDATION
INCORPORATED
81 Fulton Street
New York City

Francis P. Garvan
President

Vice-President
George J. Corbett
Treasurer
Joseph H. Choate, Jr.
General Counsel
Ramsay Hoguet
Patent Counsel

Trustees
Otto T. Bannard, Chairman
Cleveland H. Dodge
George L. Ingraham
R. Howell Griswold, Jr.
Bradley W. Palmer

Refer to

Cable Address
Chemfound

November 23, 1921.

Mr. J. R. Zimmerman,
Office of Alien Property Custodian,
16th & P. Streets, NW.,
Washington, D. C.

Dear Mr. Zimmerman:

With respect to the matter of quit-claiming Patents Nos. 912,352 and 1,108,307 which were sold and assigned subsequent to the assignment to the Foundation, I regret to say that I have not had an opportunity to take this matter up with Mr. Garvan, but I am trying to get a few minutes with him at the very earliest opportunity. As soon as I am able to present this matter to him I shall be pleased to inform you regarding his desires with respect to the same.

I note that you question in the last paragraph of your letter as to when I expect to be in Washington, and in answer thereto, as I see things now I do not expect to be in Washington again until after the first of the year. However, if there is something of real import I could probably arrange to come to Washington for a day or two.

Very truly yours,
(Sgd.) LLOYD VAN DOREN.

LVD:ACK

**PLAINTIFF'S EXHIBIT No. 631-N.**

Trust No. 12247.
Report No. 38549.

November 19, 1921.

The Chemical Foundation, Inc.,
81 Fulton Street,
New York City.

*Attention, Dr. Van Doren.*

Gentlemen:

On examination of our records, I find that patents Nos. 912,352 and 1,108,307 were assigned to The Chemical Foundation on April 10, 1919. They were also licensed to the Government on April 3, 1920, and they were sold along with other assets of the C. P. Goerz American Optical Company and assigned by the custodian to Merton E. Grush, the purchaser of that Company, under an assignment dated June 8, 1920.

Will you kindly take this matter up with Mr. Garvan and ask him for me if he will agree to quit claim these patents to Merton E. Grush.

My reason for asking you to do this is that you wil be able to get all of the data concerning these two patents compiled before submitting the matter to Mr. Garvan.

I will greatly appreciate your kind attention to this and will be glad to reciprocate whenever it is in my power.

Will you kindly advise me if you expect to be in Washington in the near future.

Yours very truly,

(Sgd.) J. R. ZIMMERMAN,
*Patent Section.*

JRZ:MBJ

**PLAINTIFF'S EXHIBIT No. 632.**

Norma Co. of America.

December 4, 1918.

Henry B. McCormick, Esquire,
305 North Front Street,
Harrisburg, Pa.

Dear Mr. McCormick:

I have your letter of the twenty-fifth ultimo, in reference to the Norma Company of America.

It is very difficult to arrange a private sale of any of these properties, because the law says we must sell at public sale unless the President "stating the reasons therefor in the public interest" shall otherwise determine. It is rather difficult to find reasons in the public interest for a private sale in this case, or indeed in any case.

I should think a plan might be worked out by which a public sale could be held, and Mr. Nones could be protected against any persons acquiring an interest in the property whom he might be afraid. I wish you would talk this matter over with Mr. Guffey, Director of the Bureau of Sales, 110 West 42nd Street, New York City, or with Ralph J. Baker of his office. Mr. Baker lives in Harrisburg and you might be able to see him there. I have shown your letter to Mr. Guffey and Mr. Baker.

Yours truly,

(Sgd.) A. MITCHELL PALMER

**PLAINTIFF'S EXHIBIT No. 633.**

Copy

EMERY, VARNEY, BLAIR & HOGUET,
149 Broadway,
New York.

March 15, 1920.

Lucien H. Boggs, Esq.,
16th & P Streets, N. W.,
Washington, D. C.

Dear Mr. Boggs:

In regard to the matter of patents and trade marks now held by the Custodian and which relate to the business of concerns sold by him but which were not listed and sold in the prospectuses of such sales, I confirm what I said to you in Washington last week and await your definite advice and instructions.

Mr. Hoguet and I advise that in every such case, the purchaser be permitted to acquire, for a small sum, a naked license—a license which amounts simply to a waiver of suit thereunder—so that he will be immune from prosecution in the future under such patent or patents. As we left the matter, I understood that you were agreeable to this course and that you would take up the matter at once with the Custodian and fix the consideration for such a license. In my opinion, this should be paid as a lump sum and I think ten dollars per patent would be fair, reasonable and proper under all of the circumstances.

Mr. Hoguet and I also advise in the case of any such patent or patents, that they be offered for sale at public sale provided the purchaser of the business to which they relate will agree to bid at such public sale and to offer a price at least sufficient to cover the expenses of the sale.

As I told you, I discussed this matter fully with

Mr. Garvan when in Washington last week, and he was agreeable to this course.

Will you not write me definitely about this as soon as possible so that I can act in the matters of the Norma Company of America and the Jagenberg Machine Company in which this situation has arisen.

Yours very truly,

(Sgd.) L. E. VARNEY.

G:H

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**PLAINTIFF'S EXHIBIT No. 634.**

THE NORMA COMPANY OF AMERICA
BALL BEARINGS, ROLLER BEARINGS
THRUST BEARINGS
Anable Ave., Long Island City,
New York, N. Y.

Trade Mark
"Norma"
Registered
Office of
Walter M. Nones
President

Cable Address
Normaco, New York
Liebers and A B C
(5th Edition) Codes

April 26th, 1921.

Hon. Col. T. W. Miller,
Alien Property Custodian,
16th & P Streets,
Washington, D. C.

Dear Sir:

I appreciate the receipt of your letter of the 23rd of April and thank you for your decision to grant me a non-exclusive license under the desired patents. I would naturally have preferred an exclusive license as this would give me better protection in developing any business that could be found for these devices. A non-exclusive license will, however, serve to protect

my Company's interests and I appreciate very much the decision you have taken as this will answer this purpose. I see that the license is to come through the Chemical Foundation, Inc. These patents have nothing to do with the Chemical industry and I am wondering why the license comes through them.

I would appreciate knowing why this is and to know if I should now apply to them for this license or whether I shall hear from them through your action.

Sincerely yours,

(Sgd.) W. M. NONES,
*President.*

WMN/CW

Alien Property Custodian
Received Apr 28 1921
Noted P. S. Date.....
Ans'd ..... Date.....

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**PLAINTIFF'S EXHIBIT No. 634-A.**

ALIEN PROPERTY CUSTODIAN
SIXTEENTH & P STREETS, N. W.
Washington, D. C.

April 23, 1921.

Mr. Walter M. Nones,
The Norma Company of America,
Anable Ave.,
Long Island City, N. Y.

Dear Sir:

Replying to your call at this office, as well as your communication of recent date, asking for an exclusive license for the Norma Company of America, in connection with certain patents seized by the Alien Property Custodian, I beg to inform you that after giving

this matter considerable thought, I have determined to grant you a non-exclusive license on these patents. I understand from you that this will answer your purpose, and in addition thereto, it will be impossible for me to give you an exclusive license, inasmuch as the Navy Department now holds a non-exclusive license for these patents.

The form of procedure is to assign these patents to The Chemical Foundation, Inc., which I have done today, and they in turn will license them to you.

Very truly yours,

(Sgd.) THOMAS W. MILLER,
*Alien Property Custodian.*

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**PLAINTIFF'S EXHIBIT No. 635.**

March 23, 1920.
File 00724-D

Messrs. Emery, Varney, Blair & Hoguet,
149 Broadway,
New York, N. Y.

*Attention Mr. L. E. Varney.*

Dear Mr. Varney:

I am sorry that I missed you during my recent visit to New York, but had a very satisfactory conference with Mr. Hoguet concerning your letter of the 15th relating to outstanding patents connected with manufacturing concerns, but which were not sold with the stock on account of the fact that we did not know their connection with the business.

I told Mr. Hoguet that I could not recommend to the Custodian the acceptance of an arbitrary sum as purely nominal as $10.00, and after some discussion we agreed on the following plan:

In such cases your firm will select a patent expert whose qualifications to give an opinion on such a matter are recommended by you. This expert will make an examination of the patent in question in relation to the business, and furnish the Custodian with an opinion as to a fair charge to be made for a non-exclusive license for the life of the patent, plus a release for past infringements, the expense of the services of this expert and your charges, if any, to be borne by the proposed licensee.

I discussed this plan with the Custodian yesterday, and it met with his approval.

Yours very truly,

(Sgd.) LUCIEN H. BOGGS,
*General Counsel.*

LHB:FW
N.F.

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**PLAINTIFF'S EXHIBIT No. 636.**

(Copy)

EMERY, VARNEY, BLAIR & HOGUET
COUNSELLORS AT LAW
149 Broadway
New York

February 17, 1921.

Mr. Paul Smith,
Chief Corporation Management Division,
Office Alien Property Custodian,
16th & P Streets, N. W.,
Washington, D. C.

*In Re: Norma Company of America.*

Dear Mr. Smith:

I am sorry that I was not here when you took up with Mr. Hoguet the matter of the patents and trademark referred to in yours of the 9th instant, addressed to my firm for my attention.

I happened to be in Washington at the time and telephoned you at the Alien Property Custodian office there to see if I could see you.

It is true that our records were burned in the Hotel Chamberlain fire; but I distinctly remember the situation so that I can set it forth here, I think, correctly.

It was just a year ago this month that I went to Washington to take this matter up with Mr. Garvan. I went to Old Point on a Saturday, intending to come up to Washington by boat the following Sunday night. I had taken with me all the papers in the Norma Company case. I reached Washington all right and saw Mr. Garvan; but the papers were burned.

The following is what I put up to Mr. Garvan at that time. When we made the original search for patents to be sold with the business of the Norma Company of America, there were certain patents which we did not find and which were brought to our attention after the sale. One reason why we did not find these patents was because some of them belonged to Fortuna Werke, a German concern which we did not associate with the Norma Company of America at that time. There were other reasons why these patents were not turned up. You will understand that in every case we tried to turn up the patents which were necessary to the conduct of any business which the Custodian was to sell and that, owing to the difficulties which naturally attended such an investigation and the limited time in which it had to be made there was always a likelihood that the list of patents found would be incomplete.

After the sale of the Norma Company had taken place, certain patents were brought to our attention by Mr. Nones, the purchaser of the Norma Company, and among these patents were those which you refer to in your letter and also the trademark to which you

refer. To determine whether these patents properly belonged to the business which Mr. Nones bought, I made a personal investigation, noting what the patents covered, and examining into the manufacture of ball bearings at the Norma Company's plant to see if these inventions were used in the regular course of that business. The result was that I found these inventions were used, always had been used, and that to continue the business of the company as it had been conducted before the sale, these patents were really necessary. The chief patents which we discovered originally and concluded to be connected with the Norma Company's business, were the patents belonging to Norma Compagnie g.m. b.H., a German concern, apparently the parent concern of the Norma Company of America. All of those patents were listed and sold with the stock of the Norma Company to Mr. Nones.

And so, a year ago, when I saw Mr. Garvan, I laid this all before him and he told me to take it up with Mr. Boggs. I took it up with Mr. Boggs and Mr. Boggs, according to a memorandum which I made at the time opposed the transfer of these additional patents to the Norma Company or to Mr. Nones for the following reason:

> "The difficulty Mr. Boggs finds is that the patents in question are in a different trust and he does not think that any rights should be given under such patents without proper compensation."

What the Custodian decided to do in view of Mr. Bogg's recommendation was to give to Mr. Nones, without any further payment, a non-exclusive license under these additional patents and under the trademark. Or, in the alternative, to put these patents up at public sale provided the Norma Company would guarantee to bid at the public sale and to offer at least as much for the patents and trademark as the expenses of such public sale amounted to.

I took this up a year ago with Mr. Nones and so advised Mr. Kalish, Mr. Nones' counsel, and nothing further, so far as I know, was ever done. My own feeling at the time was that if Mr. Nones purchased the stock of the Norma Company with the understanding that he was obtaining from the Custodian for the price for which he bid the property in, all of the patent and trademark rights which the Norma Company of America had formerly enjoyed and which were necessary to a conduct of its business as the same had been carried on theretofore, then the Custodian ought to see that he had the same patent monopoly and therefore that these additional patents and trademark were transferred to him. As this would require an executive order, I even went so far as to formulate such an executive order and I enclose the copy of the same which I find in my files. You will see that this executive order refers to other patents besides those mentioned in your letter. I took all of these patents up at the time and believe that all of them should be transferred.

I am sorry that I have been away from my office for two weeks and hence have been unable to take this matter up before. When I returned this morning, I not only found your letter but a letter from Mr. Kalish and enclosing a copy of a letter which he wrote to the Custodian on January 24th.

I am therefore writing Mr. Kalish today and am sending him a copy of this letter which will advise him of what I have done.

Yours very truly,
(Signed)

G/H/Enc.

## PLAINTIFF'S EXHIBIT No. 637.

(Copy)

KALISH & KALISH
COUNSELORS AT LAW
27 WILLIAM STREET
NEW YORK

January 24th, 1921.

Alien Property Custodian,
Division of Patents,
Washington, D. C.

Dear Sir:

Our client, The Norma Company of America, having its principal office at Anable Avenue, Long Island City, is desirous of procuring a license for the use of the following patents seized by the Alien Property Custodian, which patents we understand, have not been sold or assigned by the Custodian.

| Patent No. | Date of Patent | Inventor | Invention |
|---|---|---|---|
| 1,048,073 | December 24, 1912 | Carl A. Hirth, assignor to Fortuna-Werke Albert Hirth. | Gage. |
| 1,049,860 | January 7, 1913 | Albert Hirth | Micrometer Gage. Application No. 748,875 filed Feb. 17, 1913—allowed Dec. 27, 1917, to Carl A. Hirth—assigned to Fortuna-Werke together with Trademark "Minimeter" No. 73162 to Fortuna-Werke and Albert Hirth. |

The Norma Company manufactures ball, roller and thrust bearings and is probably the fifth largest manufacturer of bearings in the United States.

The Company, its business and personnel are known to your office.

Will you be good enough to let us have information as to the terms and conditions under which licenses for the use of the above patents may be procured by the Company?

Yours truly,

(Signed) KALISH & KALISH.

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**PLAINTIFF'S EXHIBIT No. 638.**

4-8-21

HIRTH MINIMETER

The Minimeter is a precision gaging or testing apparatus invented in Germany by Carl Albert Hirth. Hirth was the head of the Norma Compagnie, G.m.b.H. of Cannstatt-Stuttgart, Germany, and also part owner of Fortuna Werke Albert Hirth of the same place. This firm later changed its name to Fortuna Werke Spezial Maschinen Fabrik, G.m.b.H.

The Fortuna Werke were manufacturers of special machines. The Norma Compagnie, G.m.b.H. manufactured Norma ball bearings and Hirth invented his Minimeter for the particular purpose of gaging the parts of ball bearings in process of manufacture by Norma Compagnie, G.m.b.H.

As Norma Compagnie, G.m.b.H. were entirely manufacturers of bearings and as the Minimeter could be used for other work as well as for work on ball bearings the Minimeter invention was taken into the Fortuna Werke although Norma Compagnie, G.m.b.H. manufactured a great many of the instruments for their own use.

The high quality and extreme precision of Norma ball bearings is largely due to the use of this Minim-

and other patents had not been thought of or included and that thereby The Norma Company of America would suffer. The Alien Property Custodian's office was approached and it promptly seized the patents of Carl Albert Hirth and all other patents found to be taken out by or assigned to Fortuna Werke Albert Hirth and Fortuna Werke Spezial Maschinen Fabrik.

Requests were made by our Legal Counsel, Mr. Edwin L. Kalish, of Messrs. Kalish & Kalish, New York, supported by Mr. Varney of Messrs. Emery, Varney, Blair & Hoguet, Patent Counsel of the Alien Property Custodian who knew all the circumstances of the case, to sell these Minimeter and other patents to Mr. Nones or to The Norma Company of America by private sale. These requests having been refused requests were then made to give an exclusive license and in September 1919 Mr. Garvan, Alien Property Custodian, assured Mr. Kalish that the President would probably direct a private sale and that in any event we could be assured of an exclusive license. Again in January 1920 Mr. Garvan, Alien Property Custodian, informed Mr. Kalish that the President was opposed to any more private sales but that this difficulty might be overcome or perhaps a way could be found through the grant of an exclusive license by the Alien Property Custodian. In any event a non-exclusive license would be granted upon request.

We avoided making a request for a non-exclusive license as others might be granted similar rights and our control over the Minimeter and through it our control in the ability to produce a particularly high grade bearing would be hurt through the ability of others to obtain the use of the instruments that protected our precision production.

No action could be obtained upon these matters and in March 1920 following a petition by Mr. Var-

ney that these patents should be sold to us the General Counsel of the Alien Property Custodian stated that the difficulty was that the patents in question were in a different trust, that is, not the Norma Trust, and were seized after the Norma sale and that the Alien Property Custodian had no authority to grant any rights under such patents without proper compensation to the Trust under which the seizure was made and that the Custodian only had power to grant a non-exclusive license and only after expert opinion was given as to the value of the license, the purchaser being expected to defray the expenses of the license including the expert's fee.

We continued to endeavor to obtain an exclusive license and it is only recently that we have been told that no license of any kind would be granted.

We cannot see the justice of this firstly because we were told by the Alien Property Custodian that if we had thought of these patents and they had been seized prior to Norma sale they would have been included in that sale. Secondly, because after that sale Mr. Garvan the Alien Property Custodian stated that he realized an excessively heavy price had been paid for the property and that if he could do anything to be of service to us he would be ready to do it. Thirdly, because these Hirth Minimeter patents are intimately tied up in The Norma Company of America and these instruments are absolutely required in the manufacture of its product. If they become the property of outside parties The Norma Company of America cannot obtain the benefit of their exclusive control and this exclusive control by The Norma Company of America has been one of its chief advantages in the manufacture of its high grade product.

W. M. Nones or The Norma Company of America desire an exclusive right to these patents for the

reasons stated. If for any valid reason these exclusive rights cannot be granted then W. M. Nones or The Norma Company of America is ready in order to protect itself so that it can at least continue the use of these instruments to take a non-exclusive license and in either case to pay whatever reasonable compensation is demanded in return. In this request is included the request for the Trade-mark "Minimeter" by which name these instruments are known.

The patents are:

| | | | |
|---|---|---|---|
| #1,048,073 | December 24, 1912 | Gage | C. A. Hirth assignor to Fortuna Werke Albert Hirth |
| 1,049,860 | January 7, 1913 | Micrometer-Gage | C. A. Hirth |

Trade-mark Registration #73,162—Minimeter.

The other patents relating to other Hirth inventions which are of value to The Norma Company of America are:

| | | | |
|---|---|---|---|
| # 909,300 | January 12, 1909 | C. A. Hirth | Feed Device for Machine Tools, etc. |
| 1,150,441 | August 17, 1915 | J. Loose | Flexible Coupling |
| 1,162,720 | November 30, 1915 | C. A. Hirth | Measuring Tool |
| 1,201,318 | October 17, 1916 | J. Loose | Grinding Machine |
| 1,244,090 | October 23, 1917 | C. A. Hirth | Machine Bearing |

Also Applications for Letters Patent of the United States

| Serial No. | Filing Date | Inventor | Title |
|---|---|---|---|
| 636,030 | July 29, 1911 | C. A. Hirth | Ball Bearings |
| 748,875 | February 17, 1913 | C. A. Hirth | Gage |

## PLAINTIFF'S EXHIBIT No. 639.

### THE CHEMICAL FOUNDATION, INC.

### STATEMENT OF INCOME AND EXPENSES BY YEARLY PERIODS FROM BEGINNING OF OPERATION TO DECEMBER 31, 1922.

Supplementing Defendant's Exhibit 91.

| | Total | Apl. 10/19 to Dec. 31/19 | Twelve Months Ending Dec. 31 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| **INCOME** | | | | | |
| **Licensed Patents** | | | | | |
| Manufactured Products | 267,973.02 | 9,478.91 | 62,619.61 | 58,566.12 | 137,308.38 |
| Imported " | 210,603.85 | | 48,601.93 | 99,244.43 | 62,757.49 |
| Contracts acquired | 2,442.06 | 1,557.25 | 274.37 | *145.47** | 755.91 |
| Licensed Trade Marks | 8,596.76 | | 1,671.15 | 3,476.85 | 3,448.76 |
| Imported Products under War Trade Board License | 154,539.02 | | 34,539.77 | 60,936.51 | 59,062.74 |
| Miscellaneous Income | 2,456.67 | | 2,401.59 | 55.08 | |
| Total | 646,611.38 | 11,036.16 | 150,108.42 | 222,133.52 | 263,333.28 |
| License Fees | 30,900.00 | 2,600.00 | 12,100.25 | 9,399.75 | 6,800.00 |
| Contributions received | 11,500.00 | 11,000.00 | 500.00 | | |
| Interest on Bank balances and discounts | 10,914.45 | 4,152.82 | 4,784.06 | 1,835.97 | 142.60 |
| | 699,925.83 | 28,787.98 | 167,492.73 | 233,369.24 | 270,275.88 |
| **EXPENSES** | | | | | |
| Office and General Salaries | 205,466.68 | 18,443.56 | 51,275.55 | 81,549.27 | 54,198.30 |
| Legal Expenses | 74,915.35 | 27,046.47 | 3,446.26 | 12,640.71 | 31,781.91 |
| General | 39,197.98 | 16,146.81 | 8,640.48 | 1,569.83 | 12,840.86 |
| Patent Sundry Expense | 62,562.08 | 17,286.71 | 34,112.69 | 9,243.43 | 1,919.25 |
| Rent | 27,500.00 | 5,000.00 | 7,500.00 | 7,500.00 | 7,500.00 |
| Stationery, office supplies and postage | 10,443.61 | 1,723.34 | 2,678.86 | 4,871.13 | 1,170.28 |
| Traveling expense | 13,249.21 | 3,052.20 | 2,214.62 | 4,326.21 | 3,656.18 |
| Investigation " | 2,037.28 | 294.97 | 385.10 | 1,006.20 | 351.01 |
| Subscriptions and periodicals | 1,149.33 | 39.00 | 195.38 | 544.28 | 370.67 |
| Insurance | 588.41 | 43.68 | 87.36 | 238.20 | 219.17 |
| Telephone and telegraph | 4,900.85 | 367.38 | 931.00 | 2,034.03 | 1,568.44 |
| Office alterations | 3,427.45 | 870.32 | 1,406.93 | 1,150.20 | |

| | Total | Apl. 10/19 to Dec. 31/19 | Twelve Months Ending Dec. 31 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| Taxes | 2,752.70 | 102.00 | 783.90 | 797.90 | 1,068.90 |
| Laboratory Expense | 682.74 | | 184.11 | 257.11 | 241.52 |
| Photostat " | 1,558.88 | | 192.32 | 670.62 | 695.94 |
| Depreciation on furniture and fixtures | 6,451.37 | | 1,732.42 | 1,943.93 | 2,775.02 |
| Amount forward | 456,883.92 | 90,416.44 | 115,766.98 | 130,343.05 | 120,357.45 |
| Amount forward | 456,883.92 | 90,416.44 | 115,766.98 | 130,343.05 | 120,357.45 |
| Washington office expense | 23,389.26 | | | 9,632.19 | 13,757.07 |
| Miscellaneous expense | 12,448.79 | 436.33 | 2,328.90 | 5,248.12 | 4,435.44 |
| Light | 306.46 | | | 167.22 | 139.24 |
| Organization expense | 11,574.84 | | | 11,574.84 | |
| Lillienfield Patent expense | 1,576.96 | | | | 1,576.96 |
| Loss on furniture sold | 1,181.04 | | | | 1,181.04 |
| Total expenses | 507,361.27 | 90,852.77 | 118,095.88 | 156,965.42 | 141,447.20 |
| Net income before charging Educational Expense | 192,564.56 | *62,064.79** | 49,396.85 | 76,403.82 | 128,828.68 |
| Educational Expense Literature and pamphlets | 340,245.76 | 7,689.26 | 28,727.72 | 227,600.87 | 76,227.91 |
| Net Profit *or Loss* | *147,681.20** | *69,754.05** | 20,669.13 | *151,197.05** | 52,600.77 |

*Matter in italics in red on original.

**PLAINTIFF'S EXHIBIT No. 640.**

THE UNIVERSITY OF CHICAGO
Department of Chemistry

May 3, 1919.

Mr. Francis P. Garvan,
110 West 42nd St.,
New York, N. Y.

Dear Mr. Garvan:

I am writing to make sure of the understanding reached in our conference on April 26 in regard to Arsphenamine. I understand that you would like to have a committee consisting of myself, Dr. G. W. McCoy, (Director of the Hygienic Laboratory, Washington, D. C.) and Mr. Edward S. Rogers, an attorney in Chicago, who has been connected with the Federal Trade Commission, and who has championed in splendid fashion the cause of the public in the matter of synthetic drugs, to assist you in an advisory capacity in matters connected with Arsphenamine. We would include the question of the issuance of further licenses, the question of public control of the toxicity of all preparations, the question of price, etc., subject, of course always to the final decision of the Chemical Foundation.

I am writing to make sure of this understanding because, as indicated to Mr. Choate in the conference, it seems to us that in the case of Arsphenamine the public interests would be better served if, in addition to the present licensees, not more than two, or at the utmost three, further firms be licensed. This limitation would be desirable because it would greatly facilitate, and reduce the expenses of, the control of toxicity, and further it would reduce overhead charges and make it possible to reduce the cost of this expensive

drug to the public. This is already being done, as you no doubt are aware, by the Metz Laboratories.

If this view is in accordance with your own judgment it would be exceedingly important for the Committee to consider carefully what firms should be recommended for the additional licenses. In my judgment they should be 100% American, particularly in view of the fact that one of the old licensees has Japanese connections, another Canadian, and a third used to be affiliated with German firms.

The second point I would like to urge is that one of the new licensees should, if possible, be located in the West, partly in order to encourage this type of manufacturing in Western cities, partly in order to win the support of the West for the important plan of which you have in mind.

Finally, the licensees should, if possible, be well established and eminent firms.

I am already in correspondence with the Mallinckrodt Company of St. Louis, asking whether they would not be interested in an arsphenamine license. I am of the opinion that this firm stands pre-eminent in the West, both in its scientific experience and particularly also in its ethical relations to medicine. Other firms interested no doubt would be the Monsanto Chemical Company, the Abbott Laboratories, and possibly Parke, Davis and Company, but I consider the Mallinckrodt Company the best in the West.

Under another cover I am sending you two addresses in which the relation of Chemistry to Medicine is discussed. I am sending the same pamphlets to Mr. Keohan, and have asked that galley proof of third address be dispatched as soon as possible.

I am also supplying Mr. Keohan with a list of important drugs and their applications, a duplicate of which I am enclosing for you.

If there is anything further I can do in helping you bring these important problems before the public, kindly do not hesitate to call upon me.

I am

Yours sincerely,

(Sgd.) JULIUS STIEGLITZ.

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**PLAINTIFF'S EXHIBIT No. 641.**

May 9, 1919.

Dr. Julius Stieglitz,
Department of Chemistry,
University of Chicago,
Chicago, Illinois.

My dear Doctor Stieglitz:

I have your letter of May 3rd, together with a considerable amount of literature which you have sent to me. I wish to thank you for it, and for your generous and patriotic interest in the work that we have undertaken.

Your understanding as to our conference is correct. It is my desire that you, Dr. McCoy, Mr. Rogers, and Mr. Phelps act as an Advisory Committee on pharmaceuticals to the Chemical Foundation. It is with this in mind that I am sending you a request for a license which I have received. Won't you please advise me as to whether or not you think this license should be granted? According to the charter of the Chemical Foundation, none but American citizens can obtain patents. The agent for the concern in this country, however, who is an American citizen, is willing to make the application himself. I would like your judgment on this application as early as convenient.

You will, of course, be interested to know that I have discovered about 2,000 ampules of salvarsan in

Kansas City, which were seized by the Customs authorities because it was smuggled into the country. Dr. McCoy is extremely anxious to get this salvarsan for use in the Public Health Service laboratories, and I have started machinery in motion to get it for him as speedily as possible.

I have been informed that the War Trade Board has granted quite a number of licenses for the importation of dyes. I hope to obtain a copy of these licenses within the next two or three days. We may find this list of great help to us.

Your suggestion that a license for the manufacture of salvarsan be granted to the Mallinskrodt Company of St. Louis is an excellent one. This Company, from the information at my disposal, appears to be a very high-class concern. I would suggest that you have this Company make application direct to the Chemical Foundation for an Arsphenamine license. Knowing your opinion, the rest would not be very difficult.

If any difficulty should arise in the distribution of the Luminal, please inform me immediately, as it is my intention that there be no holdup in the distribution of this most important remedy to the needy epileptics of the country.

Sincerely yours,

(Sgd.) FRANCIS P. GARVAN.

## PLAINTIFF'S EXHIBIT No. 642.

### THE CHEMICAL FOUNDATION INCORPORATED.

**Statement of Salaries and Wages.**

| | 1919 | 1920 | 1921 | 1922 | Total |
|---|---|---|---|---|---|
| ers: | | | | | |
| G. J. Corbett, Sec. & Treas. | | $3,750.00 | $15,000.00 | $4,375.00 | $23,125.00 |
| F. A. Morlock, Asst. Sec. | $921.16 | 3,118.82 | 3,721.19 | | 7,761.17 |
| E. F. Haaren | | | | 1,625.00 | 1,625.00 |
| | $921.16 | $6,868.82 | $18,721.19 | $6,000.00 | $32,511.17 |
| ral Office: | | | | | |
| H. E. Bateman, Asst. to V. Pres. | $1,227.41 | $3,057.27 | | | $4,284.68 |
| J. M. Gray, Translator | 1,817.40 | 6,077.11 | | | 7,894.51 |
| J. L. Kane, Imports | 472.80 | 1,614.90 | 2,633.34 | 4,166.62 | 8,887.66 |
| M. G. O'Connor, Tele. Operator | 684.77 | 1.557.90 | 490.45 | | 2,733.12 |
| Mrs. M. Ford, Tele. Operator | | | 729.17 | | 729.17 |
| P. T. Boone, Accountant | | 240.80 | 1,730.97 | | 1,971.77 |
| W. Curran, Bookeeper | | | 1,906.67 | 2,275.00 | 4,181.67 |
| E. F. Haaren, Lawyer | | | 2,173.16 | 1,500.00 | 3,673.16 |
| A. McGrath, Office Boy | 327.20 | 738.00 | 910.50 | 1,099.99 | 3,075.69 |
| P. Caulfield " " | | | 472.50 | | 472.50 |
| E. Halpin " " | | | 84.00 | | 84.00 |
| Elevator Men | | 56.00 | | | 56.00 |
| W. Bachman, Tele. Operator | | | 158.66 | 1,000.00 | 1,158.66 |
| W. W. Buffum, Accountant | | | 2,387.85 | 5,208.38 | 7,596.23 |
| J. A. Moore, Office Boy | | | 205.53 | 225.00 | 430.53 |
| | $4,529.58 | $13,341.98 | $13,882.80 | $15,474.99 | $47,229.35 |
| ical Dept. | | | | | |
| S. A. Tucker, Chemist | $4,085.36 | $7,700.00 | $5,350.00 | $1,000.02 | $18,135.38 |
| C. F. Chandler, " | 726.63 | 2,166.71 | 2,000.06 | 2,000.04 | 6,893.44 |
| A. W. Joyce " | | 2,346.45 | 3,038.66 | 3,125.00 | 8,510.11 |
| E. J. Muhs, " | 325.43 | 1,684.86 | 2,127.06 | 2,187.50 | 6,324.85 |
| L. VanDoren " | | 923.16 | 4,051.46 | 2,777.75 | 7,752.37 |
| A. Linz " | | | 5,358.99 | 4,583.27 | 9,942.26 |
| L. K. Snyder " | 1,273.61 | | | | 1,273.61 |
| P. DeWolfe " | 625.00 | 512.50 | | | 1,137.50 |
| C. B. Sloan " | 295.00 | | | | 295.00 |
| | $7,331.03 | $15,333.68 | $21,926.23 | $15,673.58 | $60,264.52 |

| | 1919 | 1920 | 1921 | 1922 | Total |
|---|---|---|---|---|---|
| **Investigation.** | | | | | |
| L. F. Muccino | $1,623.29 | $3,531.06 | $5,570.53 | $4,583.27 | $15,308 |
| J. J. Powers | | 600.00 | 1,373.35 | | 1,973 |
| | $1,623.29 | $4,131.06 | $6,943.88 | $4,583.27 | $17,281 |
| **File Dept.** | | | | | |
| A. E. Dotterer, File Clerk | $900.12 | $1,869.48 | $1,823.20 | $1,500.00 | $6,092 |
| C. Faye " " | | | 720.71 | 996.70 | 1,717 |
| E. F. Moran | 325.43 | 852.39 | | | 1,177 |
| | $1,225.55 | $2,721.87 | $2,543.91 | $2,496.70 | $8,988 |
| Carried Forward | $15,630.61 | $42,397.41 | $64,018.01 | $44,228.54 | $166,274 |
| Brought Forward | $15,630.61 | $42,397.41 | $64,018.01 | $44,228.54 | $166,274 |
| **Stenographers:** | | | | | |
| Miss T. A. Kraus | $698.17 | $1,637.48 | $2,025.90 | $2,083.38 | $6,444 |
| " L. M. Rapp | 456.33 | 1,371.06 | 1,622.00 | 1,333.30 | 4,782 |
| " H. Retzlaff | 510.07 | 964.82 | | | 1,474 |
| " L. T. Conroy | | 510.59 | 1,391.07 | | 1,901 |
| " M. K. Stauffer | 698.73 | 502.02 | | | 1,200 |
| " A. Karl | | 280.00 | 1,422.00 | 936.00 | 2,638 |
| " A. E. Dittrich | | 150.00 | 1,580.00 | 1,666.62 | 3,396 |
| " E. Taylor | | 183.09 | 653.99 | | 837 |
| " I. P. Davis | | | 1,386.02 | 485.32 | 1,871 |
| " E. Pollack | | 578.68 | | | 578 |
| " V. Reed | | | 733.37 | 1,250.00 | 1,983 |
| " J. H. Vogt | | | 994.02 | 1,213.31 | 2,207 |
| " J. D. Noonan | 90.00 | | | | 90 |
| " A. E. Mullaney | 50.00 | | | | 50 |
| " F. B. Schenck | 9.40 | | | | 9 |
| (d) " D. M. Donegan | | | | 958.49 | 958 |
| " A. E. Lins | | | 3.00 | | 3 |
| (c) " M. E. Murray | | | | 43.34 | 43 |
| | $2,512.70 | $6,177.74 | $11,811.37 | $9,969.76 | $30,471 |
| **Copyists:** | | | | | |
| (b) Miss V. Bachman | $300.25 | $950.40 | $868.83 | | $2,119 |
| " L. S. Webb | | | 1,460.00 | | 1,460 |
| (c) " M. E. Murray | | | 651.00 | | 651 |
| " M. Pittman | | | 280.00 | | 280 |
| (d) " D. M. Donegan | | | 183.31 | | 183 |
| " L. Lininger | | | 4.00 | | 4 |
| " G. Waagh | | | 4.00 | | 4 |
| " A. Shul | | | 18.75 | | 18 |
| | $300.25 | $950.40 | $3,469 89 | | $4,720 |
| **Washington Office.** | | | | | |
| W. F. Keohan, Mgr. | | $1,750.00 | $2,250.00 | | $4,000 |
| Total | $18,443.56 | $51,275.55 | $81,549.27 | $54,198.30 | $205,466 |

## PLAINTIFF'S EXHIBIT No. 643.

### THE CHEMICAL FOUNDATION, INC.
### TEMENT OF EDUCATIONAL LITERATURE, SALARIES AND WAGES

| | 1919 | 1920 | 1921 | 1922 | Total |
|---|---|---|---|---|---|
| ional Literature | | | | | |
| Work wages | | 263.35 | 1,067.75 | 75.25 | 1,406.35 |
| er: | | | | | |
| G. Mead | | 4,250.00 | 15,000.00 | 14,166.70 | 33,416.70 |
| graphers: | | | | | |
| L. T. Conroy | | 288.48 | 924.42 | | 1,212.90 |
| K. Greves | | | 1,153.87 | 1,875.00 | 3,028.87 |
| L. S. Webb | | | 160.00 | 585.00 | 745.00 |
| : | | | | | |
| E. Sweeney | | | 1,369.18 | 1,500.00 | 2,869.18 |
| McGrath | | | 102.56 | 45.83 | 148.39 |
| J. Remmis | | 41.67 | 40.00 | | 81.67 |
| L. Swisky | | 40.00 | 40.00 | | 80.00 |
| S. Levine | | 41.67 | | | 41.67 |
| M. Forman | | 30.02 | 536.00 | | 566.02 |
| V. Reed | | | 320.00 | | 320.00 |
| R. S. Forman | | | 440.00 | | 440.00 |
| K. R. Donovan | | | 900.00 | 130.00 | 1,030.00 |
| H. Haynes | | | 492.00 | | 492.00 |
| F. Melvin | | | 399.00 | | 399.00 |
| A. E. Wood | | | 78.00 | | 78.00 |
| M. P. Lane | | | 165.00 | | 165.00 |
| H. E. Guyan | | | 550.04 | 130.00 | 680.04 |
| M. Herbert | | | 498.00 | 390.01 | 888.01 |
| F. Murphy | | | 276.00 | | 276.00 |
| W. Reilly | | | 171.00 | | 171.00 |
| R. Jordan | | | 684.00 | 754.03 | 1,438.03 |
| D. M. Donegan | | | 346.69 | | 346.69 |
| M. E. Murray | | | 96.00 | 86.66 | 182.66 |
| K. Reilly | | | 51.00 | 345.00 | 396.00 |
| E. Smith | | | 51.00 | | 51.00 |
| L. M. O'Brien | | | 49.50 | | 49.50 |
| L. M. Stanton | | | 18.00 | 40.50 | 58.50 |
| C. Weaver | | | 51.00 | 6.00 | 57.00 |
| E. J. Burke | | | 60.00 | 63.00 | 123.00 |
| P. Becker | | | 60.00 | 6.00 | 66.00 |
| L. V. Erickson | | | 58.50 | | 58.50 |
| M. V. Gordon | | | 60.00 | 49.50 | 109.50 |
| E. Higgins | | | 57.00 | 69.00 | 126.00 |
| I. Stikolchich | | | 15.00 | 67.50 | 82.50 |
| F. Kilgour | | | 9.00 | 69.00 | 78.00 |
| C. Killy | | | 9.00 | 67.50 | 76.50 |
| Amount forward | | 4,955.19 | 26,358.51 | 20,521.48 | 51,835.18 |

| | 1919 | 1920 | 1921 | 1922 | T |
|---|---|---|---|---|---|
| Amount forward | | 4,955.19 | 26,358.51 | 20,521.48 | 51,8 |
| Miss J. B. Scott | | | 9.00 | 69.00 | |
| " K. Ritzinger | | | | 30.00 | |
| " E. Murray | | | | 44.25 | |
| " Mae Griffin | | | | 28.50 | |
| " A. Valois | | | | 63.00 | |
| " Linda O'Brien | | | | 69.00 | |
| " E. Moller | | | | 64.50 | |
| " Violet Poss | | | | 33.00 | |
| " Walsh | | | | 5.25 | |
| " Booth | | | | 15.00 | |
| " M. Farrell | | | | 90.00 | |
| Addressograph Operators: | | | | | |
| Miss G. More | | | 258.00 | | 2 |
| " I. T. Towles | | | 330.02 | | 1 |
| " M. Kane | | | 453.36 | 390.01 | 8 |
| " D. Breakey | | | 464.80 | 43.33 | 5 |
| | | 4,955.19 | 27,873.69 | 21,466.32 | 54,2 |

## PLAINTIFF'S EXHIBIT No. 644.

### THE CHEMICAL FOUNDATION INCORPORATED.

### LEGAL EXPENSE ACCOUNT

### FROM BEGINNING OF OPERATIONS TO DECEMBER 31, 1922.

| | Total | 1919 | 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| , Varney, Blair & Ho- | $17,651.98 | $7,809.98 | $10,014.50 | | *172.50** |
| T. Gordon | 2,500.00 | 2,500.00 | | | |
| , Choate, Sherman & | 10,263.52 | | 5,233.79 | $5,029.73 | |
| King, Tracy & Smith | 200.00 | | | 200.00 | |
| Ramsey & Harry D. | 5,713.45 | | | 5,541.70 | 171.75 |
| Stellwagen | 5,000.00 | | | 5,000.00 | |
| J. Kent | 1,408.70 | | | 1,050.00 | 358.70 |
| Warfield & Duell | 14,237.59 | | | 500.00 | 13,737.59 |
| F. Reed & Edwd. S. | 973.47 | | | 84.50 | 888.97 |
| & Caton | 5,145.35 | | | | 5,145.35 |
| , Thorndike, Palmer & | 100.00 | | | | 100.00 |
| , Hardin & Skinner | 1,746.21 | | | | 1,746.21 |
| J. Casey | 500.00 | | | | 500.00 |
| | 200.00 | | | | 200.00 |
| , Morris & Hechscher | 439.64 | | | | 439.64 |
| H. Tyrell | 1,217.55 | | | | 1,217.55 |
| Garvan-Pd. Boggs & Ca- | 1,500.00 | | | | 1,500.00 |
| , Jerome & Kressel | 5,013.40 | | | | 5,013.40 |
| D. Nims | 37.78 | | | 37.78 | |
| X-Ray Tube Co. | 500.00 | | | 500.00 | |
| & Proctor | 31.46 | | 31.46 | | |
| Lightoner Oxtoly & | 100.00 | | 100.00 | | |
| | 435.23 | 435.23 | | | |
| | $74,915.35 | $10,745.21 | $15,379.75 | $17,943.71 | $30,846.66 |

s in italics in red on original.

he yearly total cannot be made to agree with the amounts shown by years on iff's Exhibit No. , which was prepared from the reports of the auditors Defendant, but the total amount does agree.

## PLAINTIFF'S EXHIBIT No. 645.

### THE CHEMICAL FOUNDATION INCORPORATED.
### GENERAL LITERATURE ACCOUNT
### FROM BEGINNING OF OPERATIONS TO DECEMBER 31, 1922.

| | Total | 1919 | 1920 | 1921 | |
|---|---|---|---|---|---|
| Purposes of Chemical Foundation (1/2) | $7,689.25 | $7,689.25 | | | |
| Mailing " " " | 1,375.62 | 1,375.62 | | | |
| Postage " " " | 1,100.00 | 1,100.00 | | | |
| Envelopes " " " | 885.85 | 885.85 | | | |
| Cartage and Express " | 106.43 | 106.43 | | | |
| (Printing Circulars, Voting ( Trust, Prospectus, Sub. ( Blanks, etc. | 965.07 | 965.07 | | | |
| Postage, Advance on Pamphlet Testimony before Senate | 3,000.00 | 3,000.00 | | | |
| Pamphlet of Patents | 801.00 | 801.00 | | | |
| Miscellaneous | 223.59 | 223.59 | | | |
| Metallurgical Books | 799.65 | | 799.65 | | |
| Vat Dye Books | 962.91 | | 962.91 | | |
| Bulletins | 2,181.58 | | 670.00 | 1,511.58 | |
| Patent Index | 30.00 | | 30.00 | | |
| American Dye Inst., Printing, Postage, etc. | 2,738.17 | | 2,738.17 | | |
| Stencil Supplies | 81.80 | | 81.80 | | |
| Stationery | 102.63 | | 102.63 | | |
| Mimeograph Paper & Supplies | 155.63 | | 155.63 | | |
| Supplemental List of Patents | 27.50 | | 27.50 | | |
| Printing Hearing Before Committee on Finance | 2,640.59 | | 2,640.59 | | |
| Stenographer a/c above | 431.60 | | 431.60 | | |
| Pamphlets | 58.25 | | | 58.25 | |
| 500 Legal Reports | 388.75 | | | | 3 |
| Garvan's Testimony before Sub Com. Senate | 6,807.32 | | | | 6,8 |
| "Garvan Demands Harding Clear Him" Plates | 3,750.00 | | | | 3,7 |
| House Books 10 M | 950.00 | | | | 9 |
| Imhoff Tank Booklets, including Postage | 944.79 | | | | 9 |
| | $39,197.98 | $16,146.81 | $8,640.48 | $1,569.83 | $12,8 |

## PLAINTIFF'S EXHIBIT No. 646.

### THE CHEMICAL FOUNDATION INCORPORATED.
### PATENT SUNDRY EXPENSE
### FROM BEGINNING OF OPERATIONS TO DECEMBER 31, 1922.

| | Total | 1919 | 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| ording Fees | $ 949.00 | $ 75.00 | $ 173.00 | $ 422.00 | $279.00 |
| eal " | 410.00 | 220.00 | 120.00 | 50.00 | 20.00 |
| al " | 3,216.00 | 276.00 | 1,280.00 | 880.00 | 780.00 |
| cellaneous | 18,162.86 | 10,400.19 | 5,593.91 | 1,963.81 | 204.95 |
| gal Services & Searches | | | | | |
| mery, Varney, Blair & Hoguet | 23,447.84 | 3,297.00 | 19,825.00 | 325.84 | |
| an Doren & Evarts | 9,200.00 | | 9,200.00 | | |
| J. Mulvey | 1,898.90 | | 220.75 | 1,419.25 | 258.90 |
| r. Evarts | 558.00 | | 558.00 | | |
| iff & Warland | 90.00 | | 90.00 | | |
| n Ramsey & Harry D. Nims | 409.03 | | | 221.45 | 187.58 |
| harles D. Clark | 72.00 | | | 72.00 | |
| rohan | 774.63 | | | 774.63 | |
| len G. Fish | 100.00 | | | 100.00 | |
| rnes, Townsend & Brickenstein | 1,025.00 | | | 1,025.00 | |
| rdk. J. Moses | 1,500.00 | | | 1,500.00 | |
| onard B. Ziesler | 335.00 | | | 335.00 | |
| uell, Warfield & Duell | 188.82 | | | | 188.82 |
| r. Van Doren | 225.00 | | 225.00 | | |
| | $62,562.08 | $14,268.19 | $37,285.66 | $9,088.98 | $1,919.25 |

The yearly total cannot be made to agree with the amounts shown by years on Plaintiff's Exhibit No. , which was prepared from the reports of the auditors of the defendant, but the total amount does agree.

These amounts were charged to defendant by Emery, Varney, Blair & Hoguet, being employees of that firm.

## PLAINTIFF'S EXHIBIT No. 647.

### ORGANIZATION EXPENSE

| Date | Name | Detail | Amount | Total |
|---|---|---|---|---|
| 1919 | | | | |
| Mar. 20 | Secretary of State | State Tax | $50.00 | |
| | | Indexing | 2.00 | |
| | | Certifying Cert. of Inc. | 4.50 | $56. |
| | Recorder of Deeds | Recording Cert. of Inc. | 5.50 | |
| | | Notary Fees | .50 | |
| | | Revenue Stamps | .30 | |
| | | Messenger to Dover, Del. | 4.30 | |
| | | Telephone & Telegraph | .70 | |
| | | Stock Ledger, Stock Transfer Book | 7.00 | |
| | | Corporate Seal | 3.00 | |
| | | Minute Book | 10.00 | 31. |
| Apr. 5 | Brown Green Co. | 8 books of preferred & Common Stock Certificates | | 271. |
| Dec. 31 | Joseph H. Choate, Jr. | Legal Services | | 10,000. |
| 1920 | | | | |
| Apr. 29 | Brown Green Co. | Printing 1,000 Trust Cert. | | 168. |
| June 15 | Central Union Trust Co. | Imprinting 1 line on 250 Stock Certificates | 5.00 | |
| | | Federal Tax Stamps on 840 shares preferred stock at 5¢ each | 42.00 | |
| | | 292 shares common stock at 5¢ each | 14.60 | 61. |
| June 25 | Geo. M. Fisher, State Treas. | Annual Franchise Tax for 1919 | | 43. |
| July 7 | Evarts, Choate, Sherman & Leon | Application Fee for authority to Corp. to do business in State of New York | | 11. |
| 15 | Kalamazoo Loose Leaf Binder Co. | 2 full Latigo Current binders with R. M. lettered four lines gold and indexes | | 55. |
| 23 | Evarts, Choate, Sherman & Leon | Balance of application Fee to do business in N. Y. State—Total Fee $52.— | | 41. |
| | | | | $10,739. |

| 1920 Date | Name | Detail | Amount | Total |
|---|---|---|---|---|
| | | Brought Forward | | $10,739.39 |
| Aug. 11 | Central Union Trust Co. | Federal Tax Stamps on 2371 shares preferred stock @ 5¢ | | 118.55 |
| 26 | Comptroller of State of New York | Capital Stock Foreign License Fee | | 536.13 |
| Oct. 22 | Albert Hepp & Co. | 1-200 Page Cash Book | $3.00 | |
| | | 250 Triplicate Sets transfer sheets of Voting Trust Certificates-**Common Stock**-#1 to 250 and **Preferred stock** #1 -250 | 60.00 | |
| | | 100 Sheets Carbon Paper | 4.00 | |
| | | 4 Permanent Binders for Transfer sheets of which 2—Common—Preferred | 22.00 | |
| | | 2 Temporary Binders for Transfer sheets of which 2—Common —2 Preferred | 8.00 | |
| | | 100 Ledger Sheets each Voting Trust Certificates for Common and Preferred stock | 45.25 | 142.25 |
| Dec. 21 | Lloyd Van Doren | R. R. tickets to Wash. D. C. | | 38.52 |
| | | | | $11,574.84 |

## PLAINTIFF'S EXHIBIT No. 648.

### THE CHEMICAL FOUNDATION, INC.
### TRAVELLING EXPENSES FROM BEGINNING OF OPERATIONS TO DECEMBER 31, 1922.

| | Total | 1919 | 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| J. T. Boone | $404.51 | | | $404.51 | |
| George J. Corbett | 826.34 | | 37.63 | 788.71 | |
| [illegible] de Wolf | 11.89 | 11.89 | | | |
| W. G. Gordon | 75.00 | 75.00 | | | |
| A. W. Joyce | 146.62 | | | 139.00 | 7.82 |
| M. F. Keohan | 1,173.51 | 57.85 | 766.81 | 348.85 | |

| | Total | 1919 | 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| A. Linz | $403.77 | | | $219.40 | $184.3 |
| L. G. Mead | 1,821.27 | | | 69.41 | 1,751.8 |
| Ralph B. Miller | 72.35 | | 72.35 | | |
| F. A. Morlock | 72.60 | 4.10 | 30.76 | 37.74 | |
| E. J. Muhs | 44.96 | | 20.25 | | 24.7 |
| R. F. Muccino | 1,260.48 | 310.01 | 470.69 | 357.62 | 122.1 |
| S. A. Tucker | 1,370.82 | 593.35 | 694.50 | 82.97 | |
| D. L. Van Doren | 1,317.24 | | 118.34 | 935.01 | 263.8 |
| Miss Webb | 262.84 | | | 262.84 | |
| " Pittman | 138.84 | | | 138.84 | |
| J. L. Kane | 210.78 | | | 143.03 | 67.7 |
| Dr. C. H. Herty trip to Europe | 2,000.00 | 2,000.00 | | | |
| W. W. Buffum | 1,548.44 | | | 344.05 | 1,204.3 |
| F. E. Sweeney | 52.47 | | | | 52.4 |
| F. P. Garvan | | | | 23.80 | 23.8 |
| H. E. Horn | 30.43 | | | 30.43 | |
| Sundry | 3.85 | | 3.29 | | .5 |
| | 13,249.21 | 3,052.20 | 2,214.62 | 4,326.21 | 3,656.1 |

*In red on original exhibit.

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## PLAINTIFF'S EXHIBIT No. 649.

### THE CHEMICAL FOUNDATION INCORPORATED.
### WASHINGTON OFFICE EXPENSES
### FROM BEGINNING OF OPERATIONS TO DEC. 31, 1922.

| | Total | 1919 | 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| **Washington Office Expense** | | | | | |
| Salary—W. F. Keohan | $9,750.00 | | | $3,750.00 | $6,000.0 |
| " Clerks | 2,409.42 | | | 1,035.92 | 1,373.5 |
| Rent | 1,415.00 | | | 720.00 | 695.0 |
| Travelling Expense Keohan | 2,213.03 | | | 1,245.86 | 967.1 |
| Telephone & Telegraph | 2,133.00 | | | 871.39 | 1,261.6 |
| Mimeographing | 275.76 | | | 275.76 | |
| Taxicab | 984.26 | | | 492.46 | 491.8 |
| Sundry | 2,410.47 | | | 1,240.80 | 1,169.6 |
| Expense Congressional Investigation | 1,783.47 | | | | 1,783.4 |
| " Tariff Hearings | 14.85 | | | | 14.8 |
| | $23,389.26 | | | $9,632.19 | $13,757.0 |

## PLAINTIFF'S EXHIBIT No. 649-A.

### THE CHEMICAL FOUNDATION, INC.
### WASHINGTON OFFICE EXPENSES

| Date. | Name | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 1921. | | | | |
| /6 | W. F. Keohan, Manager | Salary @ $500 per month | 750.00 | |
| 6/30 | Agnes Riordan | " " 134 " " | 201.00 | 951.00 |
| | The Munsey Building | Rent @ $80 per month | | 240.00 |
| 6/30 | W. F. Keohan. Traveling Expenses | N. Y. to Lakewood & return | 39.64 | |
| | " " " | N. Y. and return | 41.18 | |
| | " " " | " " " | 40.25 | |
| | " " " | " " " | 69.15 | |
| | " " " | " " " | 69.74 | |
| 20/21 | " " " | " " " | 50.66 | 310.62 |
| | Chesapeake & Potomac Telephone Co. | Service and Tell Charges | 70.88 | |
| | " | " " " " | 57.25 | |
| | Telegram | | .51 | |
| | " | | 1.00 | |
| | " | | 1.00 | |
| | " | | 1.50 | |
| | " | | .84 | |
| | " | | 1.90 | |
| | " | | .51 | |
| | Telephone calls (Outside of office) | | 4.15 | |
| | " " | | 26.36 | 165.70 |
| | Rexford L. Holmes | Mimeographing Herty's Speech | 28.62 | |
| | " " " | " Lefebure Work | 247.14 | 275.76 |
| | Alice O'Brien | Correcting Mss. of Abstract of Amer. Dye Patents | | 40.00 |
| | National Academy of Science | 3 subscriptions to Bulletin of Nat'l Research Council | | |
| | | Vol. 1, 1920 | 15.00 | |
| | | " 2, 1921 | 5.00 | |
| | | 3 sets Series of National Research Council #1, 12, 14 | 13.35 | |
| | Congressional Record | 3 Subscriptions | 13.50 | 46.85 |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 4/5 | Taxi | | $3.10 | |
| 4/6 | " | | 2.35 | |
| 4/7 | " | | 1.60 | |
| 4/8 | " | | 3.10 | |
| 4/11 | " | | 3.00 | |
| 4/13 | " | | 2.20 | |
| 4/14 | " | | 5.00 | |
| 4/17 | " | | 3.00 | |
| 4/18 | " | | 2.60 | |
| 4/20 | " | | 3.10 | |
| 4/21 | " | | 3.00 | |
| 4/23 | " | | 2.40 | |
| 4/25 | " | | 4.90 | |
| | | | 39.45 | $2,029.9 |
| | | Brt. Forward | 39.35 | 2,029.9 |
| 5/1 | Taxi. | | 3.20 | |
| 5/3 | " | | 2.20 | |
| 5/5 | " | | 4.10 | |
| 5/6 | " | | 2.20 | |
| 5/7 | " | | 3.10 | |
| 5/9 | " | | 4.20 | |
| 5/10 | " | | 3.10 | |
| 5/12 | " | | 3.60 | |
| 5/14 | " | | 1.60 | |
| 5/16 | " | | 2.20 | |
| 5/17 | " | | 3.10 | |
| 5/19 | " | | 1.20 | |
| 5/20 | " | | 3.90 | |
| 5/21 | " | | 4.10 | |
| 5/24 | " | | 4.00 | |
| 5/27 | " | | 2.10 | |
| 6/1 | " | | 2.70 | |
| 6/3 | " | | 2.50 | |
| 6/4 | " | | 1.60 | |
| 6/7 | " | | 4.20 | |
| 6/8 | " | | 3.80 | |
| 6/10 | " | | 3.00 | |
| 6/11 | " | | 1.16 | |
| 6/13 | " | | 4.00 | |
| 6/14 | " | | 3.20 | |
| 6/14 | " | | 3.00 | |
| 6/15 | " | | 3.20 | |
| 6/16 | " | | 4.00 | |
| 6/17 | " | | 2.60 | |
| 6/20 | " | | 2.10 | |
| 6/23 | " | | 2.70 | |
| 6/24 | " | | 2.50 | |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 6/25 | Taxi | | $2.80 | |
| 6/27 | " | | 3.50 | |
| 6/27 | " | | 1.50 | |
| 6/28 | " | | 2.50 | |
| 6/29 | " | | 1.60 | |
| 6/30 | " | | 2.80 | |
| 6/30 | " | | 2.00 | $150.21 |
| 4/11 | Stamps | | 1.00 | |
| 5/17 | " | | 3.00 | |
| 6/1 | " | | .34 | |
| 6/20 | " | | .50 | |
| 6/25 | " | | 1.34 | |
| 6/30 | " | | 3.00 | 9.18 |
| 4/21 | Picture Frame | | 14.75 | |
| 4/23 | Incidentals | | 47.70 | |
| 5/5/21 | Whaley Eaton Service | Cable charges German production costs | 18.40 | |
| 5/9 | Sophie Hillman | Typing | 5.00 | |
| 5/16 | Woodward & Lothrop | Picture Frame | 2.45 | |
| 5/16 | Andrews | Office Supplies | 11.39 | |
| | | | 99.69 | 2,189.32 |
| | | Brt. Forward | 99.69 | 2,189.32 |
| 5/19 | Andrews | Office Supplies | 2.85 | |
| 5/18 | Hanging pictures, etc. | | 1.50 | |
| 5/25 | Moving Files | | 3.50 | |
| 5/31 | Incidentals | | 48.10 | |
| | National Geographic Society | | 12.50 | |
| | Water Cooler | | 12.00 | |
| | Washington Herald | Papers | 2.88 | |
| | Office Supplies | | 11.10 | |
| 1 | Book | | 2.50 | |
| 1 | Typing | | 5.00 | |
| 3 | Book | | 1.00 | |
| 4 | Ink | | .30 | |
| 6 | Congressional Records | | .14 | |
| | Carfare | | .60 | |
| | Express charges | | 4.61 | |
| 7 | Rexford L. Holmes | | 3.60 | |
| 8 | Express charges | | 2.08 | |
| | Government Printing Office | Documents | 3.50 | |
| 4 | Hanloin | Sign | 4.00 | |
| | Conoy | Water | 1.70 | |

| Date. | Name. | Detail. | Amount. | Total |
|---|---|---|---|---|
| 6/18 | Congressional Records | | $ .90 | |
| | Carfare | | .90 | |
| 6/17 | Re-mailing | | .83 | |
| 6/18 | Incidentals | | 56.35 | |
| 6/20 | Express charges | | 2.00 | |
| 6/23 | Evening Star Co. | | .42 | |
| 6/24 | Adlers Co. | Cards | 7.10 | |
| | Wiring for fan | | 2.00 | |
| 6/25 | Congressional Records | | .75 | |
| 6/27 | W. F. Roberts | Pictures sent to N. Y. | 15.00 | |
| | Incidentals | | 5.00 | |
| | Electric Wiring | | .50 | |
| 6/28 | Express charges | | 1.50 | |
| 6/29 | Carfare | | .30 | |
| 6/30 | Ice Company | | 3.90 | |
| | Miss Kilerlane | Typing | 3.00 | $323 |
| | | | | 2512 |

## THE CHEMICAL FOUNDATION, INC.
## WASHINGTON OFFICE EXPENSES

| Date | Name | Detail | Amount | Total |
|---|---|---|---|---|
| | | Balance June 30, 1921, detailed on previous report— | | $2,512 |
| | Agnes Riordan | Salary, 7/1/21-12/31/21 | $834.92 | |
| | W. F. Keohan | " 7/1/21-12/31/21 | 3,000.00 | 3,834 |
| 7/1/21/ to 11/30/21 | The Munsey Building | Rent @ $80 per month | | 480 |
| 7/1/21 | W. F. Keohan | Traveling Expenses—N. Y. and return | 117.68 | |
| 7/25/21 | " " " | Trav. Exp.—N. Y. & return | 55.68 | |
| 8/31/21 | " " " | " " " " " " | 76.64 | |
| 9/2/21 | " " " | Wilmington, Edgewood, Baltimore, N. Y. & return | 100.87 | |
| 9/12/21 | " " " | Wilmington, Edgewood, Baltimore, N. Y. & return— | 84.74 | |
| 9/21/21 | " " " | New York and return | 83.65 | |
| 10/1/21 | " " " | " " " " | 54.46 | |
| 10/6/21 | " " " | " " " " | 66.46 | |
| 10/9/21 | " " " | Edgewood and return | 11.00 | |
| 11/3/21 | " " " | New York and return | 64.16 | |
| 11/16/21 | " " " | " " " " | 65.64 | |
| 11/28/21 | " " " | " " " " | 43.73 | |
| 12/2/21 | " " " | " " " " | 39.24 | |
| 12/9/21 | " " " | " " " " | 71.29 | 935 |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 18/21 | Chesapeake & Potomac Telephone Co. | Service & Toll Chgs. | $115.41 | |
| 15/21 | " " " | " " " " | 70.97 | |
| 10/21 | " " " | " " " " | 129.80 | |
| 10/21 | " " " | " " " " | 49.00 | |
| 15/21 | W. F. Keohan | Telephone calls outside of office—June and July | 47.75 | |
| 26/21 | " " " | Telephone calls outside of office | 33.41 | |
| 13/21 | " " " | Telephone calls outside of office | 15.10 | |
| 22/21 | Chesapeake & Potomac Telephone Co. | Service & Toll Charges | 61.92 | |
| 15/21 | W. F. Keohan | Telephone calls outside of office | 13.24 | |
| 28/21 | Chesapeake & Potomac Telephone Co. | Service & Toll Charges | 128.86 | |
| 17/21 | W. F. Keohan | Telephone calls outside of office | 25.66 | $691.12 |
| 21/21 | W. F. Keohan | Telegram | .65 | |
| 22/21 | " " " | " | .94 | |
| 11/21 | " " " | " | 1.91 | |
| 12/21 | " " " | " | .90 | |
| 24/21 | " " " | " | 1.45 | |
| 25/21 | " " " | " | 1.90 | |
| 1/21 | " " " | " | 4.32 | |
| 30/21 | " " " | " | 2.50 | 14.57 |
| | | Carried forward— | | 8,468.82 |
| | | Brought Forward— | | $8,468.82 |
| 1/21 | W. F. Keohan | Taxi | $3.20 | |
| 11/21 | " " " | " | 3.60 | |
| 12/21 | " " " | " | 1.00 | |
| 12/21 | " " " | " | 4.00 | |
| 13/21 | " " " | " | 6.00 | |
| 14/21 | " " " | " | 3.60 | |
| 15/21 | " " " | " | 2.50 | |
| 16/21 | " " " | " | 4.00 | |
| 18/21 | " " " | " | 3.00 | |
| 19/21 | " " " | " | 2.00 | |
| 20/21 | " " " | " | 3.30 | |
| 21/21 | " " " | " | 2.00 | |
| 25/21 | " " " | " | 2.50 | |
| 25/21 | " " " | " | 2.60 | |
| 28/21 | " " " | " | 5.00 | |
| 29/21 | " " " | " | 4.40 | |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 8/1/21 | W. F. Keohan | Taxi | $3.50 | |
| 8/2/21 | " " " | " | 2.80 | |
| 8/3/21 | " " " | " | 4.00 | |
| 8/4/21 | " " " | " | 3.00 | |
| 8/11/21 | " " " | " | 5.00 | |
| 8/12/21 | " " " | " | 4.50 | |
| 8/13/21 | " " " | " | 4.00 | |
| 8/13/21 | " " " | " | 2.20 | |
| 8/15/21 | " " " | " | 3.80 | |
| 8/19/21 | " " " | " | 2.60 | |
| 8/20/21 | " " " | " | 3.70 | |
| 8/24/21 | " " " | " | 2.40 | |
| 8/25/21 | " " " | " | 4.80 | |
| 8/26/21 | " " " | " | 6.60 | |
| 9/1/21 | " " " | " | 6.40 | |
| 9/2/21 | " " " | " | 6.60 | |
| 9/10/21 | " " " | " | 3.80 | |
| 9/12/21 | " " " | " | 6.80 | |
| 9/19/21 | " " " | " | 5.00 | |
| 9/21/21 | " " " | " | 3.60 | |
| 9/28/21 | " " " | " | 6.60 | |
| 10/3/21 | " " " | " | 4.00 | |
| 10/7/21 | " " " | " | 4.20 | |
| 10/10/21 | " " " | " | 3.20 | |
| 10/11/21 | " " " | " | 5.00 | |
| 10/12/21 | " " " | " | 3.50 | |
| 10/15/21 | " " " | " | 5.40 | |
| 10/17/21 | " " " | " | 4.50 | |
| 10/19/21 | " " " | " | 2.50 | |
| 10/20/21 | " " " | " | 2.50 | |
| 10/22/21 | " " " | " | 4.20 | |
| 10/25/21 | " " " | " | 3.50 | |
| 10/26/21 | " " " | " | 2.00 | |
| 10/28/21 | " " " | " | 5.50 | |
| 10/31/21 | " " " | " | 3.00 | |
| | | Carried Forward— | 197.40 | $8,468. |
| | | Amount Brought Forward | $197.40 | $8,468. |
| 11/1/21 | W. F. Keohan | Taxi | 2.30 | |
| 11/2/21 | " " " | " | 5.50 | |
| 11/4/21 | " " " | " | 5.50 | |
| 11/7/21 | " " " | " | 2.50 | |
| 11/7/21 | " " " | " | 2.30 | |
| 11/8/21 | " " " | " | 3.50 | |
| 11/9/21 | " " " | " | 9.10 | |
| 11/10/21 | " " " | " | 4.95 | |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| /12/21 | W. F. Keohan | Taxi | $4.00 | |
| /14/21 | " " " | " | 6.00 | |
| /15/21 | " " " | " | 5.00 | |
| /16/21 | " " " | " | 7.00 | |
| /16/21 | " " " | " | 2.60 | |
| /18/21 | " " " | " | 1.30 | |
| /21/21 | " " " | " | 2.50 | |
| /22/21 | " " " | " | 3.20 | |
| /23/21 | " " " | " | 5.00 | |
| /26/21 | " " " | " | 1.00 | |
| /26/21 | " " " | " | 3.20 | |
| /28/21 | " " " | " | 3.50 | |
| /30/21 | " " " | " | 4.00 | |
| /1/21 | " " " | " | 3.20 | |
| /2/21 | " " " | " | 3.70 | |
| /3/21 | " " " | " | 4.00 | |
| /6/21 | " " " | " | 2.50 | |
| /7/21 | " " " | " | 2.60 | |
| /8/21 | " " " | " | 3.80 | |
| /9/21 | " " " | " | 5.00 | |
| /9/21 | " " " | " | 1.80 | |
| /13/21 | " " " | " | 3.20 | |
| /14/21 | " " " | " | 4.60 | |
| /15/21 | " " " | " | 3.00 | |
| /16/21 | " " " | " | 3.00 | |
| /17/21 | " " " | " | 3.00 | |
| /19/21 | " " " | " | 4.50 | |
| /20/21 | " " " | " | 2.50 | |
| /22/21 | " " " | " | 1.50 | |
| /23/21 | " " " | " | 3.00 | |
| /24/21 | " " " | " | 6.00 | 342.25 |
| /13/21 | Business Bureau | 1000 5x8 cards | 6.90 | |
| | | 2 sets quides (pressboard) | 5.00 | |
| | | 100 Manila folders | 2.00 | |
| /1/21 | Conroy Spring Water Company | Water Service—June | 2.10 | |
| /11/21 | Sam Alston | Ice Service—August | 3.75 | |
| /15/21 | Andrews | Wrapping paper | .40 | |
| /14/21 | Conroy Spring Water Company | Service for July | 3.50 | |
| | | Carried forward— | $23.65 | $8,811.07 |
| | | Brought Forward | $23.65 | $8,811.07 |
| /8/21 | Daily Trade Board | Subscription 6/25/21-6/24/21 | 6.00 | |
| /11/21 | Andrews | Office Supplies | 1.75 | |
| /10/21 | Conroy Water Co. | Water Service For August | 2.10 | |

| Date. | Name. | Detail. | Amount. | Total |
|---|---|---|---|---|
| 7/1/21 | W. F. Keohan | Incidentals | $2.82 | |
| 7/9/21 | " " " | Express Charges | 4.89 | |
| 7/12/21 | " " " | Parcel Post Charges | .56 | |
| 7/12/21 | " " " | Express Charges | 2.29 | |
| 7/12/21 | " " " | " " | .83 | |
| 7/13/21 | " " " | Subscription—Congres. Records | 13.50 | |
| 7/13/21 | " " " | Carfare | .30 | |
| 7/15/21 | " " " | Copies—Congressional Records | 2.00 | |
| 7/15/21 | " " " | Express Charges | 5.24 | |
| 7/16/21 | " " " | Copies of Record | .54 | |
| 7/16/21 | " " " | Copies—Congressional Records | 10.00 | |
| 7/16/21 | " " " | Carfare | .30 | |
| 7/16/21 | " " " | Stamps | .66 | |
| 7/18/21 | " " " | Express Charges | .82 | |
| 7/18/21 | " " " | Stamps | .35 | |
| 7/19/21 | " " " | Express Charges | 1.03 | |
| 7/19/21 | " " " | Carfare | .30 | |
| 7/20/21 | " " " | Carfare | .30 | |
| 7/22/21 | " " " | Express Charges | 1.42 | |
| 7/22/21 | " " " | Congressional Records | 1.20 | |
| 7/22/21 | " " " | Carfare | .30 | |
| 7/22/21 | " " " | Express Charges | .51 | |
| 7/22/21 | " " " | Stamps | .69 | |
| 7/22/21 | " " " | Glue | .20 | |
| 7/22/21 | " " " | Carfare | .30 | |
| 7/23/21 | " " " | Congressional Records | 2.54 | |
| 7/23/21 | " " " | Stamps | 1.56 | |
| 7/25/21 | " " " | Incidentals | 59.34 | |
| 7/25/21 | " " " | Book | 2.50 | |
| 8/1/21 | " " " | Carfare | 1.20 | |
| 8/5/21 | " " " | Newspapers | .45 | |
| 8/15/21 | " " " | Postage | 1.10 | |
| 8/15/21 | " " " | Express Charges | .66 | |
| 8/15/21 | " " " | " " | 1.50 | |
| 8/22/21 | " " " | Incidentals | 57.00 | |
| 9/26/21 | " " " | " | 74.00 | |
| 9/28/21 | " " " | Express Charges | 1.60 | |
| 10/1/21 | " " " | Stamps | 4.80 | |
| 10/1/21 | " " " | Congressional Records | .08 | |
| 10/1/21 | " " " | Carfare | 1.05 | |
| 10/1/21 | Sam Alston | Ice Service | 4.05 | |
| 10/1/21 | W. F. Keohan | Office Supplies | 1.86 | |
| 10/1/21 | " " " | List of Army & Navy Officers | .50 | |
| 10/1/21 | " " " | Postage | .83 | |
| 10/1/21 | " " " | Newspapers | .15 | |
| 10/10/21 | Sam Alston | Ice Service | 3.75 | |
| | | Carried Forward— | 304.75 | $8,811 |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| | | Amount brought forward— | $304.75 | $8,811.07 |
| 10/21 | W. F. Keohan | Congressional Records | 3.00 | |
| 10/21 | " " " | Parcel Post | .19 | |
| 10/21 | " " " | Carfare | .70 | |
| 11/21 | " " " | Incidentals | 77.50 | |
| 13/21 | " " " | Packing boxes for freight | 12.00 | |
| 13/21 | " " " | Stamps | 1.37 | |
| 13/21 | " " " | Carbon Paper | 1.50 | |
| 13/21 | " " " | Box of second sheets | 1.00 | |
| 19/21 | " " " | Newspapers | 1.66 | |
| 19/21 | " " " | 3 drinking glasses | .09 | |
| 20/21 | " " " | copy of magazine | .40 | |
| 31/21 | " " " | John G. Hodges for binding; 3-part—8 Tariff Hearings | 9.00 | |
| 31/21 | " " " | Typewriter Ribbon Coupon Book | 5.00 | |
| 31/21 | " " " | Federal Freight Service for moving boxes | 6.00 | |
| 1/21 | Sam Alston | Ice | 3.75 | |
| 7/21 | W. F. Keohan | Incidentals | 97.17 | |
| 7/21 | Science Service | Science News Bltn. for 1 yr. | 5.00 | |
| 9/21 | Andrews | Office Supplies | 3.35 | |
| 12/21 | Joe Davis | Polishing furniture | 2.00 | |
| 12/21 | Andrews | Office Supplies | 2.70 | |
| 15/21 | Jos. S. McGrath | Typing | 25.00 | |
| 15/21 | K. Kilerlane | " | 6.00 | |
| 16/21 | Andrews | Office supplies | 4.50 | |
| 21/21 | " | " " | .90 | |
| 22/21 | " | " " | 3.25 | |
| 23/21 | W. F. Keohan | Porter for packing boxes | 1.50 | |
| 23/21 | Andrews | Office Supplies | 3.20 | |
| 25/21 | " | " " | 4.20 | |
| 25/21 | W. F. Keohan | Stationery | 1.35 | |
| 30/21 | " " " | Pencils | .36 | |
| 30/21 | " " " | Carfare during month | 1.05 | |
| 30/21 | " " " | Newspapers | 2.90 | |
| 30/21 | " " " | Stamps for month | 5.73 | |
| 1/21 | Sam Alston | Ice | 3.90 | |
| 2/21 | Andrews | Office supplies | 5.50 | |
| 5/21 | " | " " | 6.25 | |
| 5/21 | " | " " | 2.70 | |
| 5/21 | Jos. McGrath | Typing | 40.00 | |
| 6/21 | W. F. Keohan | Congressional Records | 32.00 | |
| 7/21 | Andrews | Office Supplies | 2.70 | |
| 19/21 | W. F. Keohan | Incidentals | 93.80 | |
| 24/21 | " " " | Xmas gifts to Postman, etc. | 20.00 | |
| 27/21 | " " " | Newspapers for month | 4.95 | |
| 27/21 | " " " | Express Charges | 1.25 | |

| Date. | Name. | Detail. | Amount. | Tot |
|---|---|---|---|---|
| 12/27/21 | W F. Keohan | Carfare for month | $1.40 | |
| 12/27/21 | " " " | Extra copies Congressn'l. Rcd. | 2.44 | |
| 12/27/21 | " " " | Maps | .80 | |
| 12/27/21 | " " " | For packing boxes | 1.00 | |
| 12/27/21 | " " " | Stamps for month | 4.36 | $8 |
| | | | | $9,63 |

## THE CHEMICAL FOUNDATION, INC.
## WASHINGTON OFFICE EXPENSES

| Date | Name | Detail | Amount | Tot |
|---|---|---|---|---|
| | Balance December 31, 1921—detailed on previous report | | | $9,63 |
| | Agnes Riordan | Salary 1/1/22-6/30/22 | $804.00 | |
| | W. F. Keohan | Salary 1/1/22-6/30/22 | 3,000.00 | 3,80 |
| 1/1/22 to 6/30/22 | The Munsey Bldg. | Rent @ $80.00 per month | | 48 |
| 12/30/21 | W. F. Keohan | Trav. Exp.—N. Y. & return | 68.96 | |
| 1/9/22 | " " " | " " " " | 65.08 | 13 |
| 3/6/22 | " " " | " " " " | 59.33 | |
| 3/11/22 | " " " | " " " " | 72.91 | 13 |
| 4/12/22 | " " " | " " " " | 66.01 | |
| 5/21/22 | " " " | " " " " | 49.34 | 11 |
| 6/7/22 | " " " | " " " " | | 4 |
| 1/10/22 | Chesapeake & Potomac Telephone Co. | Service—toll & add'l chgs. for December and January | | 12 |
| 1/23/22 | W. F. Keohan | Telephone calls outside of office | | 1 |
| 2/10/22 | Chesapeake & Potomac Telephone Co. | Service—Toll & add'l chgs for January and February | | 10 |
| 2/17/22 | W. F. Keohan | Telephone calls outside of office | | 4 |
| 3/10/22 | Chesapeake & Potomac Telephone Co. | Service, Toll & Add'l chgs. for February and March | | 8 |
| 3/24/22 | W. F. Keohan | Telephone calls outside of office | | 2 |
| 4/10/22 | Chesapeake & Potomac Telephone Co. | Service, Toll & Add'l chgs. for March and April | | 3 |
| 4/17/22 | W. F. Keohan | Telephone calls outside of office | | 3 |

| | | | |
|---|---|---|---|
| /22 | Chesapeake & Potomac Telephone Co. | Service, Toll & Add'l chgs. for April and May | $51.35 |
| /22 | W. F. Keohan | Telephone calls outside of office | 32.05 |
| /22 | Chesapeake & Potomac Telephone Co. | Toll, and additional calls for May and local service for June | 62.70 |
| /22 | W. F. Keohan | Telephone calls outside of office | 35.10 |
| /22 | W. F. Keohan | Telegram | .50 |
| /22 | " " " | Telegrams | 3.52 |
| /22 | " " " | " | 1.25 |
| /22 | " " " | " | 1.90 |
| /22 | " " " | " | 1.27 |
| /22 | " " " | " | 1.35 |
| | | Carried forward— | $15,008.94 |
| | | Brought Forward | $15,008.94 |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| /22 | W. F. Keohan | Taxi | $3.50 | |
| /22 | " " " | " | 5.00 | |
| /22 | " " " | " | 1.00 | |
| /22 | " " " | " | 2.00 | |
| /22 | " " " | " | 3.25 | |
| /22 | " " " | " | 3.25 | |
| /22 | " " " | " | 5.00 | |
| /22 | " " " | " | 3.30 | |
| /22 | " " " | " | 3.00 | |
| /22 | " " " | " | 5.00 | |
| /22 | " " " | " | 5.50 | |
| /22 | " " " | " | 5.00 | |
| /22 | " " " | " | 2.50 | |
| /22 | " " " | " | 3.50 | |
| /22 | " " " | " | 2.25 | 53.05 |
| /22 | " " " | " | 2.00 | |
| /22 | " " " | " | 1.20 | |
| /22 | " " " | " | 4.60 | |
| /22 | " " " | " | 4.80 | |
| /22 | " " " | " | 3.00 | |
| /22 | " " " | " | 2.00 | |
| /22 | " " " | " | 3.50 | |
| /22 | " " " | " | 4.60 | |
| /22 | " " " | " | 5.00 | |
| /22 | " " " | " | 6.00 | |
| /22 | " " " | " | 4.50 | |
| /22 | " " " | " | 4.00 | |

| Date. | Name. | Detail. | Amount. | Total |
|---|---|---|---|---|
| 3/16/22 | W. F. Keohan | Taxi | $5.00 | |
| 3/17/22 | " " " | " | 5.50 | |
| 3/24/22 | " " " | " | 5.50 | |
| 3/31/22 | " " " | " | 3.00 | |
| 4/1/22 | " " " | " | 6.90 | |
| 4/4/22 | " " " | " | 5.80 | |
| 4/6/22 | " " " | " | 6.40 | |
| 4/7/22 | " " " | " | 4.20 | |
| 4/11/22 | " " " | " | 5.50 | |
| 4/17/22 | " " " | " | 2.50 | |
| 4/18/22 | " " " | " | 6.25 | |
| 4/19/22 | " " " | " | 6.00 | |
| 4/20/22 | " " " | " | 5.50 | |
| 4/24/22 | " " " | " | 6.00 | |
| 5/1/22 | " " " | " | 2.50 | |
| 5/2/22 | " " " | " | 5.50 | |
| 5/3/22 | " " " | " | 6.20 | |
| 5/5/22 | " " " | " | 3.60 | |
| 5/9/22 | " " " | " | 5.50 | |
| 5/11/22 | " " " | " | 5.50 | |
| 5/13/22 | " " " | " | 3.50 | $151.5 |
| | | Carried Forward— | | $15,213.5 |
| | | Brought Forward | | $15,213.5 |
| 5/15/22 | W. F. Keohan | Taxi | $2.00 | |
| 5/16/22 | " " " | " | 2.20 | |
| 5/17/22 | " " " | " | 3.50 | |
| 5/18/22 | " " " | " | 3.60 | |
| 5/19/22 | " " " | " | 5.50 | |
| 5/22/22 | " " " | " | 4.00 | |
| 5/23/22 | " " " | " | 5.50 | |
| 5/25/22 | " " " | " | 5.50 | |
| 5/29/22 | " " " | " | 3.50 | |
| 6/1/22 | " " " | " | 5.50 | |
| 6/3/22 | " " " | " | 5.00 | |
| 6/5/22 | " " " | " | 3.50 | |
| 6/6/22 | " " " | " | 5.00 | |
| 6/12/22 | " " " | " | 5.75 | |
| 6/14/22 | " " " | " | 3.50 | |
| 6/15/22 | " " " | " | 2.50 | |
| 6/17/22 | " " " | " | 6.50 | |
| 6/19/22 | " " " | " | 3.50 | |
| 6/20/22 | " " " | " | 5.50 | |
| 6/21/22 | " " " | " | 6.50 | |
| 6/22/22 | " " " | " | 6.50 | |
| 6/24/22 | " " " | " | 5.00 | |
| 6/26/22 | " " " | " | 5.00 | |
| 6/27/22 | " " " | " | 6.50 | |
| 6/28/22 | " " " | " | 5.00 | 116.0 |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 31/21 | Sam Alston | Ice Service Month Dec | $3.90 | |
| /22 | W. F. Keohan | Tariff Hearings | 14.85 | |
| /22 | R. P. Andrews | 2 Calendars | .50 | |
| /22 | W. F. Keohan | Incidentals | 79.88 | |
| /22 | Conroy Spring Water C | Services Set, Oct, Nov Dec | 8.40 | |
| /22 | W. F. Keohan | Newspapers for Jan | 6.15 | |
| /22 | " " " | Stamps | 2.44 | |
| /22 | " " " | Carfare | .70 | |
| /22 | Saml. C. Neidlinger | Expires Premium—Workmen's Compensation—Month of Jany | 1.25 | |
| /22 | " " " | ditto " Feby | 1.25 | |
| /22 | W. F. Keohan | Express on Pkge from N. Y. | .66 | |
| /22 | " " " | Document Govmt. Ptg. Office | 1.48 | |
| /22 | " " " | Incidentals | 86.66 | |
| /22 | " " " | Newspapers for Feby | 5.77 | |
| /22 | Saml. Alston | Ice for Jany | 3.60 | |
| /22 | W. F. Keohan | Postage | 5.09 | |
| /22 | " " " | Carfare | 1.05 | |
| /22 | " " " | Office Supplies | 1.78 | |
| | | forward | 225.41 | $15,329.59 |
| | | Brought Forward | 225.41 | 15,329.59 |
| /22 | W. F. Keohan | Expenses Incurred for March during Congressional Investigation | 535.66 | |
| /22 | " " " | Feby Expenses—Investigation | 138.37 | |
| /22 | " " " | Incidentals | 38.00 | |
| /22 | Sam'l Alston | Ice for February | 3.45 | |
| /22 | W. F. Keohan | Documents at Gov. Ptg. Office | .90 | |
| /22 | R. P. Andrews | Office Supplies | .50 | |
| /22 | W. F. Keohan | Express on case from Pathescope Co. of N. Y. | 1.64 | |
| /22 | " " " | ditto | 1.02 | |
| /22 | " " " | Incidentals for March | 42.00 | |
| /22 | " " " | Postage | 1.55 | |
| /22 | " " " | Carfare | .80 | |
| /22 | " " " | Newspapers for Month | 7.85 | |
| /22 | Saml C. Neidlinger | Expired Prem — Workmen's Compensation for Month of March | 1.25 | |
| /22 | Journal of Commerce & Com'l Bulletin | Subscription 3/16/22-3/16/23 for Washington Office | 15.00 | |
| /22 | Saml Alston | Ice for March | 3.90 | |
| | W. F. Keohan | Expressage | 1.27 | |
| /22 | Conroy Spring Water Co. | Service for Jany | 2.10 | |

| Date. | Name. | Detail. | Amount. | Tot |
|---|---|---|---|---|
| 4/27/22 | W. F. Keohan | Stenographic Service | $2.50 | |
| 4/29/22 | " " " | Incidentals | 63.00 | |
| 4/29/22 | " " " | Newspapers for Month | 5.95 | |
| 4/29/22 | " " " | Stamps for Month | 1.00 | |
| 4/30/22 | Saml Neidlinger | Expired prem — Workmen's Compensation for Month of April | 1.25 | |
| 4/30/22 | W. F. Keohan | Expenses in re Investigation at Washington, D. C., for April, 1922 | 408.55 | |
| 5/1/22 | R. L. Polk & Co. | City Directory | 24.00 | |
| 5/1/22 | W. F. Keohan | Office Supplies | 4.25 | |
| 5/4/22 | R. P. Andrews | do do | .45 | |
| 5/4/22 | Saml Alston | Ice Service for April | 3.75 | |
| 5/5/22 | R. P. Andrews | Paper | .25 | |
| 5/15/22 | E. Fisher | Typing on Statement | 1.00 | |
| 5/29/22 | W. F. Keohan | Incidentals | 59.00 | |
| 5/31/22 | " " " | Varnishing Office Furniture | 3.00 | |
| 5/31/22 | " " " | Newspapers for Month | 8.41 | |
| 5/31/22 | " " " | Postage for Month | 3.32 | |
| 5/31/22 | Saml Neidlinger | Expired Prem — Workmen's Compensation for month of May | 1.25 | |
| 6/1/22 | R. P. Andrews | Office Supplies | .20 | |
| 6/2/22 | Saml Alston | Ice service for May | 3.90 | |
| 6/20/22 | W. F. Keohan | Messenger service | .85 | |
| 6/21/22 | " " " | Daily News Record | 6.00 | |
| 6/23/22 | " " " | Expenses in re investigation at Washington, D. C., for May, 1922 | 238.44 | |
| 6/24/22 | " " " | 1 book—Chemistry in household | 3.00 | |
| 6/30/22 | " " " | Incidentals | 37.03 | |
| 6/30/22 | " " " | Newspapers for Month | 7.25 | |
| 6/30/22 | " " " | Postage for month | 3.05 | 1,91 |
| | | forward, | | $17,24 |
| | | Brought Forward | | 17,24 |
| 6/30/22 | Saml Neidlinger | Expired Prem — Workmen's Compensation—Month of June | 1.25 | |
| | | | | $17,24 |

## THE CHEMICAL FOUNDATION, INC.
## WASHINGTON OFFICE EXPENSES

| | Name. | Detail | Amount | Total |
|---|---|---|---|---|
| | Balance June 30, 1922—detailed on previous report | | | $17,242.16 |
| | Agnes Riordan | Salary 7/1/22-8/31/22 | $268.00 | |
| | " " | 1/2 " 8/31/22-12/31/22 | 301.50 | |
| | W. F. Keohan | Salary 7/1/22-12/31/22 | 3,000.00 | 3,569.50 |
| 22 to | | | | |
| 22 | The Munsey Bldg. | Rent @ $80.00 per month | $80.00 | |
| 22 | Percy H. Russell | Rent for August | 15.00 | |
| 22 | " " " | " " September | 30.00 | |
| 22 | " " " | " " October | 30.00 | |
| 22 | " " " | " " November | 30.00 | |
| 22 | " " " | " " December | 30.00 | 215.00 |
| 22 | W. F. Keohan | Trav. Exp.—N. Y. & return | 37.22 | |
| 22 | " " " | " " " " | 35.78 | |
| 22 | " " " | " " " " | 62.41 | |
| 22 | " " " | " " " " | 49.91 | |
| 22 | " " " | " " Wash., D. C.,-N. Y. and Racquette Lake | 63.83 | |
| 22 | " " " | Trav. Exp.—N. Y. & return | 28.39 | |
| 22 | " " " | " " " " | 101.66 | |
| 22 | " " " | " " " " | 42.91 | |
| 22 | " " " | " " " " | 56.51 | |
| 22 | " " " | " " " " | 58.21 | 536.83 |
| 22 | Chesapeake & Potomac Tel. Co. | Service, toll & add'l. chgs.—June and July | 75.42 | |
| 22 | " " " | Service, toll & Add'l. chgs.—7/1/22-7/31/22 | 47.47 | |
| 22 | W. F. Keohan | Tel. calls outside of office | 38.30 | |
| 22 | " " " | Additional telegrams | 6.95 | |
| 22 | Boggs & Caton | Tel. calls—Mr. Keohan for month of August | 77.32 | |
| 22 | W. F. Keohan | Tel. calls for Aug. & Sept.—outside of office | 84.15 | |
| 22 | Boggs & Caton | Tel. calls—Mr. Keohan for month of September | 74.18 | |
| 22 | W. F. Keohan | Tel. calls outside of office | 23.25 | |
| 22 | Boggs & Caton | Tel. calls—Mr. Keohan for month of October | 80.28 | |
| 22 | W. F. Keohan | Tel. calls outside of office | 17.50 | |
| 22 | Boggs & Caton | Tel. calls—Mr. Keohan for month of November | 34.26 | 559.08 |
| | | forward,— | | $22,122.57 |

| Date. | Name. | Detail. | Amount. | To |
|---|---|---|---|---|
| | | Brought Forward | | $22,1 |
| 8/5/22 | W. F. Keohan | Telegram | $.73 | |
| 8/8/22 | " " " | Telegrams | 4.84 | |
| 9/8/22 | " " " | Telegrams | 1.73 | |
| 9/8/22 | " " " | Telegrams | 1.63 | |
| 9/14/22 | " " " | Telegrams | 7.25 | |
| 9/29/22 | " " " | Telegrams | 7.07 | |
| 10/26/22 | " " " | Telegrams | 11.48 | |
| 11/17/22 | " " " | Telegrams | 5.39 | |
| 7/6/22 | " " " | Taxi | 5.00 | |
| 7/7/22 | " " " | " | 6.00 | |
| 7/10/22 | " " " | " | 5.50 | |
| 7/11/22 | " " " | " | 6.50 | |
| 7/12/22 | " " " | " | 5.20 | |
| 7/13/22 | " " " | " | 5.00 | |
| 7/14/22 | " " " | " | 9.00 | |
| 7/17/22 | " " " | " | 5.00 | |
| 7/28/22 | " " " | " | 6.00 | |
| 7/19/22 | " " " | " | 6.00 | |
| 7/20/22 | " " " | " | 6.00 | |
| 7/21/22 | " " " | " | 5.00 | |
| 7/29/22 | " " " | " | 5.00 | |
| 8/1/22 | " " " | " | 6.00 | |
| 8/2/22 | " " | " | 5.00 | |
| 8/3/22 | " " " | " | 5.00 | |
| 8/4/22 | " " " | " | 5.00 | |
| 8/7/22 | " " | " | 6.00 | |
| 8/10/22 | " " " | " | 4.30 | |
| 8/14/22 | " " " | " | 3.50 | |
| 8/15/22 | " " " | " | 2.75 | |
| 8/17/22 | " " " | " | 5.25 | |
| 8/24/22 | " " " | " | 4.25 | |
| 8/25/22 | " " " | " | 3.90 | |
| 8/27/22 | " " " | " | 3.50 | |
| 8/28/22 | " " " | " | 4.25 | |
| 8/29/22 | " " " | " | 4.85 | |
| 9/5/22 | " " " | " | 2.40 | |
| 9/6/22 | " " " | " | 5.00 | |
| 9/7/22 | " " " | " | 2.70 | |
| 9/11/22 | " " " | " | 3.80 | |
| 9/12/22 | " " " | " | 4.20 | |
| 9/14/22 | " " " | " | 3.50 | |
| 9/19/22 | " " " | " | 2.80 | |
| 9/20/22 | " " " | " | 4.70 | |
| 9/30/22 | " " " | " | 3.30 | |

| Date. | Name. | Detail. | Amount. | Total. |
|---|---|---|---|---|
| 31/22 | L. Jonas & Co. | Daily newspapers sent to Wash., D. C., office for July | $22.05 | |
| 7/22 | W. F. Keohan | Congressional Records | .73 | |
| 31/22 | W. F. Keohan | Expenses at Raquette Club for month of June | 197.29 | |
| | | forward | $220.07 | $22,333.84 |
| | | Brought Forward | $220.07 | $22,333.84 |
| 9/22 | W. F. Keohan | Incidentals | 27.50 | |
| 9/22 | " " " | Moving Expenses | 14.00 | |
| " | " " " | Newspapers for month | 7.15 | |
| " | " " " | Sam Alston for ice | 3.90 | |
| " | " " " | Office Supplies | .49 | |
| " | " " " | Stamps for month | 3.63 | |
| " | " " " | Boxes and porter to help move | 4.00 | |
| 31/22 | Samuel C. Neidlinger | Expired premium Workmen's Compensation—month of July | 1.25 | |
| 2/22 | W. F. Keohan | Incidental expenses in moving | 10.10 | |
| 4/22 | Conoy Spring Water Co. | Water service for July | 4.20 | |
| 5/22 | N. A. Parkinson | Carting literature | 20.19 | |
| 29/22 | W. F. Keohan | Expenses incurred for July during Congressional Investigation | 165.14 | |
| 31/22 | " " " | Postage for month | 6.08 | |
| " | " " " | Incidentals | 22.00 | |
| " | " " " | Newspapers for month | 7.60 | |
| " | " " " | Dime messengers to distribute "Testimony." | 6.00 | |
| " | " " " | Manilla Envelopes | 2.25 | |
| " | " " " | Rubber Keys for Typewriter | 4.00 | |
| " | " " " | Twine | .35 | |
| " | " " " | Carfare | .08 | |
| " | Samuel C. Neidlinger | Expired premium Workmen's Compensation—month of August | 1.25 | |
| 28/22 | W. F. Keohan | Expenses incurred for Aug. during Congressional Investigation | 92.44 | |
| 29/22 | " " " | Incidentals | 36.50 | |
| 30/22 | " " " | Sundries for month:— | | |
| | | 9/5—Twine | .35 | |
| | | 9/5—Subsptn.—Wash. Post for Mr. Garvan | .65 | |
| | | 9/5—Subsptn.—Wash. Star for Mr. Garvan | .75 | |
| | | 9/8—Balance water bill for Aug. | 1.40 | |

| | | | | |
|---|---|---|---|---|
| | | 9/19—Publication at Gov. Printing Office | $1.00 | |
| | | 9/29 " " " " | .56 | |
| | | 9/30—Newspapers for month | 9.42 | |
| | | 9/30—Stamps for month | 4.34 | |
| | | 9/30—Carfare for month | 1.64 | |
| 9/30/22 | Samuel C. Neidlinger | Expired premium Workmen's Compensation—month of September | 1.25 | |
| 10/4/22 | W. F. Keohan | Typing licenses | 12.00 | $693.5 |
| | | forward,— | | $23,027.3 |
| | | Brought forward,— | | $23,027.3 |
| 10/26/22 | W. F. Keohan | Expenses incurred for September during Congressional Investigation | $204.87 | |
| 10/31/22 | " " " | Incidentals | 24.00 | |
| " | " " " | Postage for month | 5.50 | |
| " | " " " | Newspapers for month | 7.33 | |
| " | " " " | Carfare for month | 1.60 | |
| " | " " " | Publications for month at Printing Office | 7.13 | |
| 10/31/22 | Samuel C. Neidlinger | Expired premium Workmen's Compensation for month of October | 1.25 | |
| 11/21/22 | W. F. Keohan | Subsptns. to Congressional Record | 4.50 | |
| 11/29/22 | " " " | Incidentals | 27.65 | |
| " | " " " | Newspapers for month | 6.35 | |
| " | " " " | Carfare " " | 1.20 | |
| " | " " " | Postage " " | 6.27 | |
| 11/29/22 | Samuel C. Neidlinger | Expired premium workmen's Compensation for month of November | 1.25 | |
| 12/30/22 | W. F. Keohan | Incidentals | 44.50 | |
| 12/30/22 | " " " | Water for November | .70 | |
| " | " " " | Newspapers for month | 5.70 | |
| " | " " " | Postage " " | 2.97 | |
| " | " " " | Carfare " " | 2.87 | |
| " | " " " | Xmas present for janitor | 5.00 | |
| 12/31/22 | Samuel C. Neidlinger | Expired premium Workmen's Compensation for month of December | 1.25 | |
| | | | | 361.9 |
| | | | | $23,389.2 |

## PLAINTIFF'S EXHIBIT No. 650.

### THE CHEMICAL FOUNDATION, INC.
### MISCELLANEOUS EXPENSES
### FROM BEGINNING OF OPERATIONS TO DECEMBER 31, 1922.

| Miscellaneous Expense. | Total | 1919 | 1920 | 1921 | 1922 |
|---|---|---|---|---|---|
| Auditing | $3,175.00 | | $1,010.00 | $1,410.00 | $755.00 |
| Delaware Charter Service | 200.00 | | | 100.00 | 100.00 |
| Registrar & Transfer Agts. | 1,000.00 | | | 500.00 | 500.00 |
| Fidelity Bonds | 350.00 | | | 350.00 | |
| Light | 209.44 | | | 209.44 | |
| Pacific Flush Tank Fees & Ex. in connection with contract | 2,238.35 | | | 2,238.35 | |
| Transcript Alleged Dye Monopoly | 2,260.25 | | | | 2,260.25 |
| Copy Garvan's Testimony before Sub. Com. Senate | 153.90 | | | | 153.90 |
| Sundry | 2,861.85 | 436.33 | 1,318.90 | 440.33 | 666.29 |
| | $12,448.79 | $436.33 | $2,328.90 | $5,248.12 | $4,535.44 |

## PLAINTIFF'S EXHIBIT No. 651.

[United States of America, Ordnance Department.]

These articles of agreement entered into this 30th day of September, 1917, between General Chemical Co., a corporation, organized under the laws of the State of New York (hereinafter called Contractor), of the first part, and the United States of America, by J. W. Joyes, colonel, Ordnance Department, United States Army (hereinafter called Contracting Officer), acting by authority of the Chief of Ordnance, United States Army, and under the direction of the Secretary of War, of the second part, witness:

Whereas war exists between the United States and Germany, constituting a national emergency; and

Whereas Contractor has made contracts or placed orders with various concerns for various materials and equipment, etc., at an aggregate cost of about $450,000, for the construction for its own uses of an ammonia plant at Shadyside, N. J., and the same have been partly completed and paid for, as per list attached hereto and made a part hereof, which list shows for some items prices originally agreed upon as between Contractor and the various concerns or persons from whom it had ordered, and shows in other cases estimated prices for items so ordered for which the actual price to be paid is contingent upon actual cost; and

Whereas the United States is now in need of materials and equipment, etc., identical in kind and quantity with those thus ordered or contracted for by Contractor, to be used in the

construction of Government-owned ammonia plant at some other location not yet determined, for the production by the United States Government of nitrates and other products useful in the manufacture of munitions and also useful for the manufacture of fertilizers, as duly provided by law, namely by section 124 (nitrate supply) of the act of Congress "For making further more effectual provision for the national defense, and for other purposes," approved June 3, 1918; and

Whereas, in view of the present national emergency, time being of the essence, and a material period of time, as well as some expense, being thereby saved to the United States, it is to the manifest material interest of the United States to acquire from Contractor the aforesaid material and equipment, etc.:

Now, therefore, under the provisions of section 120 of an act of Congress relating to the national defense, approved June 3, 1916, and pursuant to all other laws of the United States and Executive orders of the President of the United States or heads of its departments under which the requirements of advertisement for proposals are dispensed with, and contracts in the form hereof duly authorized, and also the provisions of section 124 of the aforesaid act of Congress, and in consideration of the mutual agreements herein contained, the said parties have agreed, and by these presents do agree to and with each other as follows, viz:

ARTICLE I. Contractor hereby sells, assigns, and transfers to the United States all of Contractor's right, title, and interest in and to all of the aforesaid

materials and equipment, etc., heretofore completed (exclusive of field work), shipped or ready for shipment, and contractor further sells, assigns, and transfers to the United States all its right, title, and interest in and to all the rest of said materials and equipment, etc., when and as similarly completed and ready for shipment, and in cases in which Contractor has made or shall make partial payments upon any of the aforesaid materials and equipment, etc., prior to the completion thereof, Contractor agrees to sell, assign, and transfer to the United States all such right, title, and interest in and to the aforesaid materials and equipment, etc., as Contractor shall have acquired by such partial payments; and Contractor further agrees to use all reasonable efforts to assist the Government of the United States, to the extent desired by Contracting Officer, in the procurement of such materials and equipment, etc., in the specifying, ordering, and procurement of the remaining apparatus for the plant in question and the extension thereof, to result in a total plant of approximately quadruple the capacity of the one hereinbefore described, by furnishing to the Government of the United States necessary drawings, specifications, engineering and other services, etc., and otherwise, and also furnishing such similar assistance as may be necessary and mutually agreeable to Contractor and Contracting Officer in the installation and initial operation of the entire plant; all of which the Contractor has voluntarily offered and agrees to do, subject to reimbursement of its actual expenses, but without profit or remuneration.

In consideration whereof the United States agrees to pay to Contractor immediately, in reimbursement of Contractor's expenditures up to and including the 31st day of August, 1917, for services and traveling expenses of its employees and engineering staff, permanent or temporary, in connection with the designing

and ordering of the aforesaid materials and equipment, etc., the sum of $21,526.32, as shown by the statement attached hereto and made a part hereof; and to reimburse the Contractor in the sum of $3,176.55, representing an item of expense incurred and paid by Contractor by reason of the abandonment in the interest of the United States of Contractor's project of construction for its own use at Shadyside, N. J., after a considerable amount of material, in the shape of piling, etc., and of apparatus therefor, had been transported to that site and was necessarily removed therefrom at an expense to Contractor and without any advantage to it, and in the interest of the United States.

And the United States agrees to pay to Contractor all amounts heretofore paid or hereafter to be paid by Contractor, on account of the aforesaid material and equipment, etc., such prices being determined according to the circumstances of the particular order, as shown by the order or other evidence, to the satisfaction of constructing officer; also to pay to Contractor, in reimbursement of such items of expense as it may have incurred or shall hereafter incur for the storing, transportation, or insurance of, or other expense incidental to protecting and caring for the aforesaid material and equipment, etc., until actually delivered to the United States upon their premises, and also to reimburse Contractor for its actual expenditures on account of the services and traveling expenses of its engineering staff and otherwise in assisting the Government of the United States in the matter of the aforesaid ammonia plant as hereinafter specified, from and after the 31st day of August, 1917.

And, further, the United States agrees to pay to Contractor as reimbursement of expense incurred by

it, interest at the rate of 6 per cent per annum upon all payments of the natures hereinbefore described made by Contractor, from the date of such payment by Contractor to the date of reimbursement by the United States.

ART. II. Reimbursement of amounts now due as aforesaid to Contractor shall be made by the United States as soon after the date of this agreement as it shall be practicable for the accounts to be prepared and approved. Thereafter payments shall be made by the United States upon statements of Contractor, approved by Contracting Officer, such payments being made monthly when feasible; but nothing herein shall be construed as precluding or forbidding more frequent payments by the United States.

ART. III. Contractor agrees to consent to all such modifications of all uncompleted orders and contracts, including such substitutions of material purchased and paid for directly by the United States, as Contracting Officer shall arrange with the other parties, but only upon receipt of written statements of such modifications, duly executed by the other parties and accompanied by Contracting Officer's written and signed approval thereof. For all increases in cost resulting from such modifications Contractor shall be reimbursed in the same manner as for the original purchase prices, and when such modifications for the furnishing of material and equipment, etc., shall result in lessening the aforesaid obligations of Contractor for payment to be made for material and equipment, etc., the original prices estimated or agreed upon shall be modified accordingly, to the benefit of the United States. It is agreed that Contractor shall be in no way responsible to the United States in connection with any of said orders, contracts, materials, and equipment, etc., except as hereinbefore expressly pro-

vided, it being expressly understood that when Contracting Officer shall, in the interest of the United States, request Contractor to restore or arrange for storing any of the property in question, Contractor will exercise due precaution and diligence to protect said property against loss or damage, insuring such property when Contracting Officer shall so request, in the interest of the United States.

ART. IV. Contractor agrees to use all reasonable efforts to assist Contracting Officer in arranging desired modifications of the contracts and orders hereinbefore referred to, and to secure the prompt and economical completion of said contracts and orders in accordance with their original or modified terms, the same as if the material and equipment, etc., were to be retained by the Contractor.

ART. V. Contractor agrees not to create or suffer to be created any mortgage, lien, pledge, or other incumbrance upon any of the increased facilities, materials, and equipment, etc., supplies or other property for which the United States shall pay, or title to which passes to the United States by virtue of this contract, and which are in possession of Contractor, and further agrees not to permit or suffer any attachments, mechanics' liens, or other liens or incumbrances to attach to such property, and in the event that any such attachment, lien, or incumbrance is created, agrees to pay and discharge the same, to the end that all property which shall have been paid for by the United States shall be and remain free and unincumbered property of the United States; provided, that nothing in this article contained shall require contractor to make any such payments so long as it shall in good faith contest the validity of the claim or claims therefor and so long as the operations under this contract are not interfered with; and provided further,

that contractor shall bond the claim asserted. Contractor shall give due notice that all property which shall have been paid for by the United States belongs to the United States.

ART. VI. This contract shall not, nor shall any right to receive payment, or any other interest herein, be transferred or assigned by Contractor to any persons, firms, or corporations.

ART. VII. No Member of or Delegate to Congress, or Resident Commissioner, nor any person belonging to or employed in the military service of the United States, is or shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom, but this article shall not apply to this contract so far as it may be within the operation or exception of section 116 of the act of Congress approved March 4, 1909 (35 Stats., 1109).

ART. VIII. Except as this contract shall otherwise provide, any doubts or disputes which may arise as to the meaning of anything in this contract shall be referred to the Chief of Ordnance for determination. If, however, Contractor shall feel aggrieved at any decision of the Chief of Ordnance upon such reference, he shall have the right (save only as to the allowance and determination of costs hereunder) to submit the same to the Secretary of War, whose decision shall be final.

ART. IX. This contract may be executed in any number of counterparts, all of which together shall constitute one original contract. Whenever the term "Contracting Officer" is used in this contract the same shall be considered to mean the Contracting Officer executing this agreement, his successor or successors, his duly authorized agent or agents, or anyone designated by the Chief of Ordnance, from time to time, to act as Contracting Officer hereunder.

In witness whereof the party of the first part has caused this contract to be executed by its proper officers, thereunto duly authorized, and the United States of America has caused this contract to be executed by the undersigned Contracting officer, thereunto duly authorized.

GENERAL CHEMICAL CO.

[Seal] By JAS. L. MORGAN,
*Secretary, Contractor.*

UNITED STATES OF AMERICA,
By J. W. JOYES,
*Colonel Ordnance Department*
*U. S. A.,*
*Contracting Officer.*

Witnesses:
F. H. NICHOLS,
G. H. RICHMOND.

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## PLAINTIFF'S EXHIBIT No. 652.

CONTRACT NO. T-14, MADE BY THE CHIEF OF ORDNANCE WITH CHEMICAL CONSTRUCTION CO., OF CHARLOTTE, N. C., FOR NITRIC ACID RECOVERY PLANT, DATED JANUARY 30, 1918.

FOR CONSTRUCTION AT UNITED STATES NITRATE PLANT NO 1.

These articles of agreement, entered into January 30, 1918, between Chemical Construction Co., a duly organized North Carolina corporation, first party (hereinafter called the contractor), and the United States of America, by J. W. Joyes, colonel, Ordnance Department, United States Army (hereinafter called the contracting officer), acting by authority of the Chief of Ordnance, United States Army, and under

the direction of the Secretary of War, second party, witness:

Whereas war exists between the United States and the Imperial German Government, constituting a national emergency, and

Whereas the contracting officer has satisfied himself of the suitability for military use of the articles and work which the contractor proposes to furnish, and has also satisfied himself that the price and terms of delivery and payment hereinafter set forth are fair and just:

Now, therefore, under the provisions of section 120 of an act of Congress relating to national defense, approved June 3, 1916, and pursuant to all other laws of the United States and executive orders of the President of the United States or heads of its departments under which the requirements of advertisement for proposals are dispensed with, and contract in the form hereof duly authorized, and in consideration of the premises and of the mutual agreements, and the payments to be made, as hereinafter set forth, the said parties have agreed, and by these presents do agree, with each other as follows, viz.:

ARTICLE I. *The work.*—Contractor shall, in the shortest practicable time, design, erect, and build a complete nitric acid recovery plant, embracing oxidation and concentration plants, in general plan and arrangement substantially as shown and reasonably implied on blue print copies of drawings U. S. A. 503, 504, 509, 510, 520, 523, and 524, but specifically in accordance with the description and specifications contained in the estimates dated January 28, 1918, said drawings and estimates being appended as part of this contract. Contractor shall furnish all necessary labor, material, tools, machinery, equipment, facilities, and supplies, and do all things necessary for the construc-

tion and completion of the work. All matters herein shall be in every detail subject to supervision and direction by and approval of the contracting officer.

Wherever work in connection with the plant shall be carried on simultaneously by the contractor and one or more others, all parties will be required to work cooperatively in such reciprocal relationship as shall be for the best interests of the work as a whole. Contractor agrees to abide by the decision of the contracting officer upon any disputes that may arise between contractor and such others as may be working simultaneously with the contractor upon work in connection with said plant.

Contracting officer may from time to time, by written instructions issued to contractor, make changes in any of the drawings and specifications bearing upon the work herein contemplated, issue additional instructions, require additional work, or direct the omission of work previously ordered, and all of the provisions of this contract shall apply to all such changes, modifications, etc., and contractor shall comply with all such written instructions, as if they were embodied in the original terms, drawings, and specifications.

The oxidation plant shall consist of two complete units, each unit to consist of one gas-cooling plant, comprising gas-flue connections, gas cooler, and oxidation tower; and one nitric acid gas-absorption plant, with absorption towers, acid storage and weighing tanks, exhausters, and acid pumping equipment, and each of said units to be of sufficient capacity to treat 2,000 cubic feet of nitrous acid gas of approximately 10 per cent volume nitrous oxide (assumed to be equivalent to 15,000 pounds of ammonia per day), each unit to be capable of oxidizing 15,000 pounds of ammonia per day, and the plant as a whole to be capable, by way of excess capacity, of oxidizing 33,000 pounds of

ammonia per day. Said measurements are based upon standard conditions, namely, 760 millimeters of mercury pressure at 0° centigrade temperature. Ample storage facilities for the products herein contemplated shall be provided as herein more explicitly set forth. The contractor hereby guarantees that it will so construct all towers hereinbefore mentioned so that they will neither crack nor leak, provided the leak or cracking is due to bad workmanship, or material and not caused from causes beyond contractor's control.

The concentration plant shall have sufficient capacity to concentrate from 50 to 92 per cent, 24,000 pounds of nitric acid (figured at 100 per cent acid) per day. Said concentration plant shall consist of two denitrating units, five absorption units, two condensing units, miscellaneous tanks and other equipment, one sulphuric acid concentrator, and all pumping and storage equipment, all to be housed in a building sufficiently large to accommodate equipment, etc., for complete units of twice the extent and number herein set forth. Contractor shall furnish drawings for said equipment, and the equipment itself, and drawings for the foundations and buildings, but shall not build the foundations or buildings.

Time being of the essence in every feature of this contract, contractor will furnish each unit complete within four months after its foundations, acid-pumping wells, and temporary sheds are turned over to contractor by the United States, and contractor shall be liable to the United States for any damage resulting from delay beyond said time in completing each and every such unit. Causes of delay beyond the control or fault of contractor shall be promptly reported to contracting officer, who, in such cases as he may deem proper, extend the time for completion for a period equal to any delays so caused.

Contractor shall and hereby agrees to:

1. Furnish all engineering services, complete designs, plans, blue prints, and specifications for all material and apparatus.

2. Purchase all the necessary material at market prices. If the United States be able to buy materials for lower prices than the contractor can, the right is reserved to the United States to make such purchases, furnishing contractor copies of all the purchase orders therefor. Upon the amounts of such purchase by the United States, however, contractor shall receive its hereinafter stated percentage fee as profit.

3. Furnish, as manufacturers, all materials for acid-proof masonry construction and all pacing materials at the prices indicated on its estimates hereto appended (Exhibit A), where marked "APM." Such prices shall be subject to Government revision or change, and changes therein made by the Government or the contracting officer shall apply and become effective for the purpose of this contract.

4. Guarantee that all said acid-proof masonry materials will be first class and the best of their respective kinds, and that the erection of same will be done in a first-class, workmanlike manner. For a period of one year after the plant is first placed in operation contractor will, at its own expense, repair or replace, if necessary, any part of such acid-proof masonry that in the course of normal operation may from faulty workmanship or material become defective.

5. Furnish all construction, supervision, skilled masons, necessary experts, and common labor for the erection of all materials and apparatus that may be required in the erection of this plant.

6. Install all materials and apparatus in a first-class, workmanlike manner; and be held responsible that the acid-proof material shall be satisfactory and

acceptable to the contracting officer as to its quality and character, and this for materials purchased from other manufacturers as well as from contractor, to the extent only, with respect to materials purchased from other manufacturers, of their respective guaranties to the contractor.

7. Supply complete general and detail plans of all concrete foundations, the concrete pit or well for lifts and pumping apparatus, concrete tanks, and concrete flues for the absorption units that may be required in connection with this plant, but none of the material or labor required to build and construct these items or the acid pumping wells. Contractor shall inspect, and hereby warrants and guarantees the safety and security of, all of the concrete foundations and the concrete wells to be furnished by the United States from designs, plans, or specifications prepared by contractor, its agents or employees.

8. Supply upon request in writing by the contracting officer, complete copies of all of its general and detail drawings pertaining to this work, of all of its purchase orders for materials for or in connection with this work, of all letters and instructions issued by the contractor to any persons whatsoever in connection with this work. Contractor agrees that all purchases made for this work, except such as the contracting officer may, in his discretion, except in writing from this requirement, shall be first subject to approval by the contracting officer.

The United States will—

1. Furnish all foundations and concrete work, including tanks, flues, drains, acid pumping wells, etc., required for this work.

2. Furnish such temporary buildings for the protection of the units, towers, and coolers as may be necessary and requisite, and proper sheds to protect

brick, cement, and other materials damageable by the weather.

3. Furnish such temporary housing for workmen and laborers, temporary office for engineering, accounting, and supervising forces, and contractor's field force, all with proper sanitary equipment, as in the contracting officer's discretion may be necessary.

4. Furnish necessary trackage and sidings for handling and unloading materials.

5. Furnish the necessary water for building and construction purposes and the necessary electric lighting for all of said buildings and operations.

6. Furnish air-compressor plant, water, air, and electric-power supply lines.

ART. II. *Reimbursement of costs.*—Contractor shall be reimbursed as hereinafter described for such of its actual net expenditures in the performance of the work herein contemplated, as may be approved or ratified by contracting officer and as are included in the following items:

(1) The cost of all direct labor and of all direct material which will presumably be worn out by use in the prosecution of said work, and which is necessary for and actually used in said work and actually paid for by contractor. This shall not be construed to cover tools owned by the workmen, articles upon which rental rates are charged or paid as hereinafter provided, machinery or equipment as contemplated by section 3 of this Article II, or any costs of work upon the designs for which a fixed sum is paid as hereinafter provided. The contractor shall make no departure from the standard rate of wages being paid in the locality where said work is done without the prior consent and approval of the contracting officer. All pay rolls for labor performed hereunder shall be prepared by contractor and submitted in advance of payment for approval by contracting officer.

(2) The net sums actually paid by contractor to subcontractor under all subcontracts made in accordance with the provisions of this agreement.

(3) Rental actually paid by the contractor, at rates not to exceed those mentioned in the schedule of rental rates hereto attached, for construction plant in sound and workable condition, such as pumps, derricks, concrete mixers, boilers, clam-shell or other buckets, electric motors, drills, hammers, and hoists, steam shovels, locomotive cranes, power saws, engineers' levels and transits, and such other equipment as may be necessary for the proper and economical prosecution of the work and will presumably be not worn out by its use thereon.

Rental to the contractor for such construction plant or parts thereof as it may own and furnish, at the rates mentioned in the schedule of rental rates hereto attached, except as hereinafter set forth. When such construction plant or any part thereof shall arrive at the site of the work the contractor shall file with the contracting officer a schedule setting forth the fair valuation at that time of each part of such construction plant. Such valuation shall be deemed final, unless the contracting officer shall, within 10 days after the machinery has been set up and is working, modify or change such valuation, in which event the valuation so made by the contracting officer shall be deemed final. When and if the total rental paid to the contractor for any such part shall equal the said valuation thereof, no further rental therefor shall be paid to the contractor and title thereto shall vest in the United States. At the completion of the work the contracting officer may, at his option, purchase for the United State any part of such construction plant then owned by the contractor by paying to the contractor the difference between the valuation of such

part or parts and the total rentals theretofore paid therefor.

All equipment, tools, machinery, etc., shall be classified by the contractor, such classification to be subject to approval by contracting officer, as belonging to that class included in paragraph (1) or paragraph (3), Article II, before being put into use.

The rental rate of any equipment, tools, machinery, etc., classified by contractor, with approval by contracting officer, as belonging to that class included in paragraph (3), Article II, and not appearing on schedule of rental rates, shall be agreed upon in writing by contractor and contracting officer before such equipment, etc., is put into use.

Rental rates as substitutes for those scheduled may be agreed upon in writing between contractor and contracting officer, such substitute rates to conform to rates of rental charged in the vicinity of performance of the work herein contemplated. For any such equipment, etc., which contracting officer shall furnish or supply contractor shall be allowed no rental nor fee of any kind.

(4) Loading and unloading such construction plant, the transportation thereof to and from the place or places where it is to be used in connection with said work, the installation and dismantling thereof, and ordinary repairs and replacement during its use in said work, all subject to the provisions hereinafter set forth and to the right which the United States hereby reserves in itself to directly perform or pay for any such services without having the cost thereof thus borne directly by the United States, included in the cost of the work upon which contractor's fee is based.

(5) Such transportation and expenses to and from the work of the necessary field forces for the economical and successful prosecution of the work, procuring labor, and expediting the production and transporta-

tion of material and equipment as may be approved by contracting officer.

(6) Such salaries of resident engineers, superintendents, timekeepers, foremen, and other employees at the field offices of the contractor in connection with said work, in proportion to the actual time of such field employees applied to this work as contracting officer may approve.

(7) Such buildings and equipment required for necessary field offices and the cost of maintaining them, including such minor expenses as necessary telegrams, telephone service, expressage, postage, etc., as contracting officer may approve.

(8) Such bonds, fire, liability, and other insurance as the contracting officer may approve or require, and such losses and expenses not compensated by insurance or otherwise as are found and certified by the contracting officer to have been actually sustained (including settlements made with the written consent and approval of the contracting officer) by the contractor in connection with said work, and to have clearly resulted from causes other than the fault or neglect of the contractor. Such losses and expenses shall be included in the cost of the work for the purpose of reimbursement to the contractor, but not for the purpose of determining the contractor's fee, except as hereinafter provided with respect to the cost of reconstructing and replacing any of the work destroyed or damaged.

(9) Such permit fees, deposits, royalties, and other similar items of expense incidental to the execution of this contract and necessarily incurred as are approved in advance by contracting officer.

(10) Such proportion of the transportation, traveling, and hotel expenses of officers, engineers, and other employees of the contractor as is actually in-

curred in connection with this work, with the approval of contracting officer.

(11) Such other items as should, in the opinion of the contracting officer, be included in the cost of the work. When such an item is allowed by the contracting officer, it shall be specifically certified as being allowed under this paragraph.

The United States reserves the right to pay directly to common carriers any or all freight charges on material and equipment of all kinds furnished under this contract and certified by contracting officer as being for installation or consumption in the work hereunder; contractor shall be reimbursed for such freight charges of this character as it shall in writing be required to pay and as shall be specifically certified by contracting officer, and such payments by contractor shall be considered as part of the cost of the work upon which contractor's fee shall be based. Freight charges paid by the contractor for transportation of construction plant, equipment, etc., of every character shall be treated as part of the cost of the work upon which the contractor's fee shall be based; provided that charges for transportation of such construction plant, equipment, etc., over distances in excess of 500 miles shall require special approval by contracting officer.

No salaries of the contractor's executive officers, no part of the expense incurred in conducting the contractor's main office or regular established branch office, and no overhead expenses of any kind, except as specifically listed above, shall be included in the cost of the work; nor shall any interest on capital employed or on borrowed money be included in the cost of the work.

The contractor shall take advantage to the extent of its ability of all discounts available, and when unable to take such advantage shall promptly notify contracting officer of its inability and its reasons therefor.

All revenue from the operations of commissary, or other facilities, and all rebates, refunds, etc., shall be accounted for by contractor and applied in reduction of the cost of the work.

ART. III. *Compensation.*—As full compensation for the services rendered or to be rendered by contractor under this agreement, except the preparation of certain designs, payment for which is hereinafter separately provided to be made, the United States will pay to contractor, in the manner provided by Article III hereof, a fee of $50,000, to be paid in monthly installments, each of an amount equal to 8 per cent of such of contractor's actual, necessary, and proper expenditures on account of the cost of the work as defined in Article II hereof, as remain unpaid at the end of the next preceding calendar month, until the sum of such payments as fee shall equal $45,000, the remaining $5,000 of said fee to be retained by the United States until all of the articles and work herein contemplated shall have been furnished and satisfactorily completed, thereupon said remaining sum to be paid to contractor. If any changes in designs, specifications, or instructions, as permitted by paragraph 3 of Article I of this contract, made or ordered subsequently to the date of this instrument, shall require of contractor substantially additional service, contractor shall be paid therefor such additional sum of money, not to exceed an amount equal to 8 per cent of the cost of the additional work occasioned by such changes as may be agreed upon between contractor and contracting officer as just compensation for such additional service; this method to be followed also in determining contractor's compensation for reconstruction or replacing property destroyed or damaged from causes without contractor's fault or beyond its control, but property destroyed or damaged as the natural

and proximate result of contractor's fault or negligence shall be repaired at contractor's expense.

No part of the cost of air-compressor plant, water, air, and electric power supply lines, foundations for equipment, buildings, concrete tanks and flues, acid-pumping wells, freight, other items not included in the work of the contractor, and all items specified herein as to be furnished by the United States, shall be included in the cost of the work for the purpose of determining the contractor's fee or amounts to be paid on account thereof.

As full payment for all of the designs prepared or to be prepared by contractor in connection with the work contemplated by this agreement, the United States will pay, when and as proper voucher or vouchers therefor may be submitted to and approved by contracting officer—at all events within 60 days after satisfactory completion of all of the work covered by this contract—the sum of $10,000.

ARTICLE IV. *Payments.*—On or about the 7th day of each month contractor shall prepare a statement showing as completely as possible all proper costs and expenditures up to and including the last day of the preceding month, including the amount of contractor's fee thereon. Contractor shall at such time deliver to the United States original signed pay rolls for labor, original invoices for materials purchased, and all other original and supporting papers not theretofore delivered covering expenditures made by contractor which properly may be included in the cost of the work. The United States will, upon proper vouchers approved by contracting officer, pay to contractor such proper amounts, less all previous payments. The United States may make other and more frequent payments to enable contractor to take advantage of discounts at intervals between the dates above mentioned or for other lawful purposes. Upon or within 60 days after

final completion of the work and the execution by the contractor of a release forever discharging the United States of and from all manner of debts, claims, and damages whatsoever arising under or by virtue of this contract the United States will pay to contractor any balance of cost for which contractor may properly be reimbursed and of contractor's proper fee which may remain unpaid.

ARTICLE V. *Inspection and audit.*—The contracting officer shall at all times be afforded proper facilities for inspection of the work and have access to the premises, the work, and material, all books, records, correspondence, instructions, plans, drawings, receipts, vouchers, and memoranda of every description of the contractor pertaining to said work, and the contractor shall preserve for a period of five years after its completion or cessation of work under this contract all the books, records, and other papers just mentioned.

If at any time contracting officer shall find that bills for labor or material, or other bills legitimately incurred by contractor hereunder, are not promptly paid by the contractor, contracting officer shall have the right to refuse to make further payments to contractor until all such obligations past due shall have been paid. Should contractor neglect or refuse to pay such bills within five days after notice from contracting officer so to do, then contracting officer shall have the right to pay such bills directly, and no such direct payments shall be included in the cost of the work or in the total sum upon which contractor's fee is based.

ARTICLE VI. *Special requirements.*—The contractor hereby agrees that it will: (1) Begin the work herein specified at the earliest time practicable, and diligently proceed so that such work may be completed at the earliest possible date; (2) promptly pay for all labor, material or other service rendered; (3)

procure, and thereafter maintain such insurance, in such forms and amounts, and for such periods of time as contracting officer may approve or require; (4) procure all necessary permits and licenses, and obey and abide by all laws, regulations, ordnances, and other rules applying to such work, of the United States of America, of the State or Territory wherein such work is done, of any subdivision thereof, or of any duly constituted public authority; (5) unless this provision is waived by the contracting officer, insert in every contract made by it for the furnishing to it of services, materials, supplies, machinery, equipment, or the use thereof, for purposes hereunder, a provision that such contract is assignable to the United States; will make all such contracts in its own name, and not bind or purport to bind the United States or contracting officer thereunder; (6) in every subcontract made in accordance with the provisions hereof, require the subcontractor to agree to comply fully with all the undertakings and obligations of the contractor herein, except such as do not apply to such subcontractor's work; (7) at all times keep at the site of the work a duly appointed representative who shall receive and execute on the part of the contractor such notices, directions, and instructions as contracting officer may desire to give; (8) at all times use its best efforts in all its acts hereunder to protect and subserve the interests of the United States and of contracting officer.

ARTICLE VII. *Right to terminate contract.*—Should contractor at any time refuse, neglect, or fail in any material respect to prosecute the work promptly and diligently, or default in the performance of any of the agreements herein contained, contracting officer shall have the right, after five days' written notice to the contractor to terminate this contract, and may enter upon the premises and take possession, for the purpose

of completing said work, of all materials, tools, equipment, appliances, all options, privileges and rights of the contractor, and may complete, or employ any other person or persons to complete said work. In case of such termination of the contract, the United States shall pay to contractor such amounts of money on account of the unpaid balance of cost of work and fee as will fully reimburse contractor for the cost of the work up to the time of such termination, plus a fee computed thereon at the rate or rates for monthly payment set forth in Article IV hereof; and the United States shall also pay to contractor compensation, either by purchase or rental at the election of contracting officer, for any equipment retained; such compensation, in the event of rental, to be in accordance with paragraph (3) of Article II, and in the event of purchase to be based upon the valuations declared at the time of arrival of the equipment at the site of the work, less any amounts paid as rental therefor up to the time of the taking of such possession by the United States. Contractor hereby agrees that such payments when made shall constitute full settlement of all claims of contractor against the United States for money claimed to be due to contractor for any reason whatsoever. In case of the termination of this contract for any cause, the United States shall assume and become liable as provided in Article VIII hereof, for all such obligations, commitments, and unliquidated claims arising out of this contract and not sounding in tort as contractor may have theretofore in good faith undertaken or blamelessly incurred in connection with said work, and contractor shall, as a condition of receiving the payments mentioned in this article, execute and deliver all such papers, and take all such steps as contracting officers may require for the purpose of fully vesting in the United States all of

the rights and benefits of the contractor under such obligations, commitments, etc. When contracting officer shall have performed the duties incumbent upon him under the provisions of this article, shall thereafter be entirely released and discharged of and from any and all demands, actions, or claims of any kind, on the part of the contractor, hereunder or on account hereof.

ARTICLE VIII. *Abandonment of work by contracting officer.*—If conditions should arise which in the opinion of contracting officer make it advisable or necessary to cease work under this contract, contracting officer may abandon the work and terminate this contract. In such case the United States will pay to contractor a sum of money to be computed as follows: To the unpaid remainder of the cost of the work up to the time of such abandonment, evidenced as hereinbefore provided, add to the total amount of the contractual obligations and commitments assumed by the United States under Article VII hereof, and to the sum add the proper fee to be paid contractor on the basis of said sum and the percentages provided by Article III hereof. After lawful liquidation of properly assumed claims as contemplated by Article VII hereof, unliquidated at the time of such abandonment of the work or termination of this contract, and when and as by proper authority ordered so to do, the United States will discharge such claims; no fee shall be paid to contractor upon the amounts thereof; the United States shall be the beneficiary of any latent valuable properties therein. When contracting officer shall have performed the duties incumbent upon him under the provisions of this article, the United States shall thereafter be entirely released and discharged of and from any and all demands, actions, or claims of any kind on the part of the contractor hereunder or on account hereof.

ARTICLE IX. *Patent rights.*—Contractor agrees to hold and save the United States and all persons acting under them harmless from and against all liability on account of any patent rights granted by the United States which may effect the articles herein contracted for, their component parts, or their manufacture, or the performance of this contract in any manner whatsoever: *Provided however,* That if the United States shall at any time transfer its rights to operate the plants herein contemplated to any third person, then this article shall not operate to deprive the contractor or any of its rights as patentee in the sulphuric-acid concentrator or the Southern Electro-Chemical Co., of New York, of any of its rights as patentee in the nitric-acid concentrator, both of which apparatuses are parts of said plants, as against such third persons.

ARTICLE X. *Bond.*—Contractor agrees to furnish to the United States within 10 days after signing this contract a bond with contractor as principal and such surety or sureties as shall be approved by contracting officer as surety or sureties thereon, in the penal sum of $70,000, conditioned upon the faithful and complete performance of this contract, including the carrying out of any changes as provided for by said contract, by the contractor.

ARTICLE XI. *Convict labor.*—No person or persons shall be employed in the performance of this contract who are undergoing sentence of imprisonment at hard labor imposed by the court of any of the several States, Territories, or municipalities having criminal jurisdiction.

ARTICLE XII. *Hours and conditions of labor.*—This contract is subject to the provisions of the Naval appropriation act approved March 4, 1917, and the President's Executive order dated March 24, 1917, which suspends the eight-hour law approved June 19, 1912,

and brings into effect the proviso contained in said Naval appropriation act. Said Executive order provides as follows:

"Under authority contained in the Naval appropriation act approved March 4, 1917 (Public, 391, 64th Con.), whereby it is provided:

"That in case of national emergency the President is authorized to suspend provisions of law prohibiting more than eight hours of labor in any one day of persons engaged upon work covered by contracts with the United States; *Provided further* That wages of persons employed upon such contracts shall be computed upon a basic-day rate of eight hours' work, with overtime rates to be paid for at not less than time and one-half for all hours worked in excess of eight hours.

"It is hereby ordered that the provisions of the act approved June 19, 1912, limiting the hours of daily services of mechanics and laborers on work under contracts to which the United States is a party are suspended with respect to all contracts for ordnance and ordnance stores and other military supplies and material, contracts for buildings under construction or to be constructed at the arsenals and contracts for fortifications work during the pending emergency and until further orders.

"This order shall take effect from and after this date.

"WOODROW WILSON.

"THE WHITE HOUSE,
"24 March, 1917."

It is agreed that the contractor, in doing any part of the work contemplated by this contract, and any subcontractor contracting for any part of said work, shall comply with the provisions of the naval appro-

priation act approved March 4, 1917, and the Executive order of the President of the United States dated March 24, 1917, in respect to the wages of persons employed upon contracts with the United States, so long as said act approved March 4, 1917, or said Executive order dated March 24, 1917, shall be in force and effect.

In the event of any dispute with reference to wages, hours, or other conditions appertaining to said work, between the contractor or any subcontractor and labor employed by him on said work, the contractor or subcontractor shall immediately notify the contracting officer of the existence of such dispute and the reasons therefor. Contracting officer may, at his option, instruct the contractor or subcontractor involved in such dispute as to the method or steps which the contractor or subcontractor should follow with reference thereto and the contractor or subcontractor shall thereupon comply with such instructions.

ARTICLE XIII. *Contract not to be assigned.*—Neither this contract nor any interest therein shall be assigned or transferred. The contractor shall not enter into any subcontract for any part of the work herein specified without the consent and approval in writing of the contracting officer. In case of such assignment, transfer, or subletting without the consent and approval, in writing, of the contracting officer, the contracting officer may refuse to carry out this contract either with the transferer or transferee, but all rights of action for any breach of this contract by the contractor are reserved to the United States.

ARTICLE XIV. *Government officials not to participate.*—No Member of or Delegate to Congress, Resident Commissioners, nor other persons belonging to or employed in the civil or military services of the United States is or shall be admitted to any share or part of this contract, or to any benefit that may arise

therefrom, but this article shall not apply to this contract so far as it may be within the operation or exception of section 116 of the act of Congress approved March 4, 1909 (35 Stats., 1109).

ARTICLE XV. *Settlement of disputes.*—This contract shall be interpreted as a whole and the intent of the whole instrument, rather than of any special clause, shall govern. If any doubts or disputes shall arise as to the meaning or interpretation of anything in this contract, or if contractor shall consider himself prejudiced by any decision of contracting officer made under the provisions of Article V hereof, the matter shall be referred to the Chief of Ordnance, United States Army, for determination. If, however, contractor shall feel aggrieved by the decision of the Chief of Ordnance, he shall have the right to submit the same to the Secretary of War, whose decision shall be final and binding upon both parties hereto.

ARTICLE XVI. *Notice.*—Notice under this contract shall be deemed to have been sufficiently given to and received by the contractor when mailed in a sealed postpaid wrapper addressed to Chemical Construction Co., Charlotte, N. C.

ARTICLE XVII. This contract shall bind and inure to the contractor and its successors. This contract may be executed in any number of counterparts, all of which together shall constitute the original contract.

It is understood and agreed that wherever the words "contracting officer" are used herein the same shall be construed to include his successor in office, any other person to whom the duties of the contracting officer may be assigned by proper authority, and any duly appointed and authorized representative of the contracting officer.

In witness whereof the party of the first part has caused this contract to be executed by its proper officer thereunto duly authorized, and the United States of America has caused this contract to be executed by

the undersigned contracting officer, thereunto duly authorized.

CHEMICAL CONSTRUCTION CO.,
By PETER S. GILCHRIST,
*Its President, Contractor.*
(Corporate Seal.)

THE UNITED STATES OF AMERICA,
By J. W. JOYES,
*Colonel, Ordnance Department,*
*United States Army,*
*Contracting Officer.*

Witnesses:
E. E. WARE.
C. H. RICHMOND.

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**PLAINTIFF'S EXHIBIT No. 653.**

GENERAL CHEMICAL COMPANY
25 BROAD STREET
New York

April 30th, 1917.

Dr. Chas. L. Parsons:
Bureau of Mines
Washington, D. C.

Dear Dr. Parsons:

We herewith submit the figures asked for by Dr. Noyes. The cost of plant for producing 60,000 lbs. of $NH_3$ in 24 hours, built under normal conditions, we estimate to be $2,400,000. Of this $2,400,000 it is estimated that the H-N mixture plant will cost $1,600,000 and the Ammonia plant proper $800,000.

When this plant is operating under normal conditions, with cost of raw materials, power, labor, etc. as per our estimate II of April 17th, the manufacturing cost of H÷N mixture and conversion and liquefaction costs of the $NH_3$, will be as follows:

*Manufacturing cost in Cents per 1-lb $NH_3$*

| | $H \div N$ *Mixture* | $NH_3$ *Liquefied* | |
|---|---|---|---|
| Raw Materials | .517 | | |
| Power | .103 | .035 | |
| Labor | .253 | .084 | |
| Repairs | .187 | .065 | |
| Expense & Burden | .110 | .040 | |
| Caustic Recovery | .125 | | |
| | 1.295 | .222 | |
| Int. & Deprec. 12½% on $1,600,000 | 1.000 | | |
| do 800,000 | | .500 | |
| | 2.295 | .722 | |
| Total Cost of 1-lb $NH_3$ | | | 3.017 |

As can be seen, the manufacturing cost is somewhat lower than the cost in Estimate II, which is due to the smaller investment.

If a plant is built under present conditions, with daily capacity of 15,000 lbs. $NH_3$, this plant is estimated to cost $1,000,000, of which the plant for $H \div N$ mixture will cost $670,000 and the plant for conversion and liquefaction of Ammonia $330,000. The manufacturing cost figured as above will be as follows:

*Manufacturing Cost in Cents per 1-lb. $NH_3$*

| | $H \div N$ *Mixture* | $NH_3$ *Liquefied* | |
|---|---|---|---|
| Raw Materials | .742 | | |
| Power | .338 | .112 | |
| Labor | .379 | .126 | |
| Repairs | .300 | .100 | |
| Expense & Burden | .110 | .040 | |
| | 1.869 | .378 | |
| Interest & depreciation on $670,000 | 1.700 | | |
| 330,000 | | .800 | |
| | 3.569 | 1.178 | |
| Total Cost 1-lb $NH_3$ | | | 4.747 |

In these plant costs are included all foundations, buildings and apparatus as well as power house and power plant, but no land or Railroad tracks.

Trusting this information is complete, I am

Yours very truly,

GENERAL CHEMICAL COMPANY,

(Sgd.) FREDRIK W. DE JAHN.

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## PLAINTIFF'S EXHIBIT No. 654.

[Ministry of munitions of war. Munitions inventions department.]

FINAL REPORT OF NITROGEN PRODUCTS COMMITTEE.

[Presented to Parliament by command of his Majesty.]

NITROGEN PRODUCTS COMMITTEE.

Col. Sir Henry E. F. Goold-Adams, K. B. E., C. B., C. M. G., R. A. (chairman).

G. S. Albright, Esq., M. A.

W. R. Bousfield, Esq., K. C., M. A., F. R. S.

Charles C. Carpenter, Esq., D. Sc., M. Inst. C. E.

Kenneth M. Chance, Esq., M. A. (co-opted).

Prof. J. Norman Collie, Ph. D., D. Sc., LL. D., F. R. S.

W. R. Cooper, Esq., M. A., B. Sc., M. I. E. E., representing the Physical Society.

Lieut. Col. A. W. Crossley, C. M. G., D. Sc., F. C. S., F. R. S., representing the Chemical Society.

Sir James J. Dobbie, M. A., LL. D., D. Sc., F. R. S., representing the Board of Agriculture and Fisheries.

Prof. F. G. Donnan, M. A., Ph. D., F. R. S.

Sir Arthur Duckham, K. C. B., M. Inst. C. E.

R. C. Farmer, Esq., O. B. E., Ph. D., D. Sc., representing the Explosives Department.

F. Gossling, Esq., B. Sc., representing the Board of Trade.

J. A. Harker, Esq., O. B. E., D. Sc., F. R. S., Director of Nitrogen Research Laboratory.

Prof. A. K. Huntington, A. R. S. M., M. I. M. M., M. I. M., representing the Faraday Society.

F. H. Jones, Esq., M. Inst. C. E. (co-opted).

C. H. Merz, Esq., M. Inst., C. E., M. I. E. E. (co-opted).

Right Hon. Lord Moulton of Bank, G. B. E., K. C. B., M. A., LL. D., F. R. S., Director General of Explosives Supply.

J. H. Rider, Esq., M. Inst. C. E., M. I. Mech. E., M. I. E. E. (co-opted).

E. J. Russell, Esq., O. B. E., D. Sc., F. R. S.

Sir John F. C. Snell, M. Inst. C. E., M. I. Mech. E., M. I. E. E., representing the Institution of Electrical Engineers.

Prof. The Hon. R. J. Strutt, M. A., F. R. S.

Sir Richard Threfall, K. B. E., M. A., F. R. S.

A. J. Walter, Esq., K. C., M. A., LL. B., representative of the Ministry of Munitions upon the Electric Power Supply Com. of the Board of Trade.

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NITROGEN FIXATION UNDER BRITISH CONDITIONS.

368. After a full consideration of the salient features of the various nitrogen fixation processes and of the ammonia oxidation process in the light of British conditions and of the resources and requirements of the country, the committee has arrived at the following broad conclusions:

(*a*) The arc process, although the most direct method of obtaining synthetic nitric acid, is handicapped by large power requirements, by low electro-

chemical efficiency, and by the extensive and costly character of the necessary chemical plant (pars. 196-200). Nevertheless, the process would stand to advantage as compared with the retort (Chile nitrate) process as long as the cost of electrical energy was below 9 pounds per kilowatt-year (pars. 127-201).

(*b*) The calcium cyanamide process is a throughly well-established commercial proposition and is in operation on a large scale in many countries. With electrical energy costing not more than 5 pounds per kilowatt-year, the process yields a cheaper marketable form of combined nitrogen than any other established fixation process, and is the only such process giving a solid nitrogenous fertilizer as a primary product (pars. 206, 440). The process is very adaptable involving the manufacture of calcium carbide as an intermediate product and providing a ready, although indirect method of obtaining a comparatively cheap synthetic ammonia (pars. 213-214). Calcium cyanamide also constitutes a raw material for the manufacture of crude cyanides, and of organic products of growing importance, such as nitrate of urea (par. 213).

There is no reason why the manufacture of calcium cyanamide (and calcium carbide), if laid out on a large scale, should not be successful in this country, because the higher cost of electrical energy, although an important factor from the point of view of foreign competition, is to a large extent offset by other favorable factors, such as cheap and abundant raw materials and the elimination of overseas freights (par. 217).

A steam-power station of 30,000 kilowatts maximum load is the minimum size that would be justifiable for the economical operation of the calcium cyanamide process under British conditions (par. 128).

(*c*) The Haber process, which requires little elec-

trical power and uses coke as the principal raw material, seems specially suitable for this country. It has hitherto been operated on a full commercial scale in Germany alone. With pure hydrogen at a cost not exceeding 2s. 6d. per 1,000 cubic feet, the process is capable of producing pure ammonia at a cost which is below that of any existing ammonia process and is on a parity with that of the cheapest form of combined nitrogen obtainable by any nitrogen fixation process, namely, calcium cyanamide (pars. 225-6, and Table 35, columns 1 and 3).

The process is the most promising of all the synthetic methods of manufacturing ammonia and ammonium sulphate, and is likely to have a great future (pars. 240, 434).

The experimental work carried out in full detail at the Munitions Inventions Research Laboratory under the direction of the committee warrants the erection of a manufacturing unit.

Further experience will doubtless lead to the overcoming of certain difficulties attending the operation of the process, and also to the production of pure hydrogen at a lower cost than hitherto (par. 240). In the opinion of the committee, a figure of 2s. 6d. per 1,000 cubic feet will ultimately be realized (par. 225). With the engineering and chemical experience available in this country, there is no reason why the process should not be quickly established as a commercial success on a substantial manufacturing scale.

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XIV. RECOMMENDATIONS

654. In making the recommendations set out below, the committee has been guided by the following salient facts:

(*a*) The sources of supply of combined nitrogen in the United Kingdom must be increased considerably

if the existing and prospective home demands are to be met and the prewar scale of exportation is to be maintained.

(*b*) The existing sources of supply of combined nitrogen in the United Kingdom proved wholly inadequate for meeting the war demands.

(*c*) The risks and costs of importation during war are very serious.

(*d*) Combined nitrogen (as cyanamide or ammonium sulphate) can be obtained by synthetic processes at a cost, at the factory, which is less than half the market price of combined nitrogen from other sources, prewar conditions being taken as the basis in each case.

(*e*) Concentrated nitric acid can be made by synthetic processes for about half the prewar cost by the standard retort process via Chile nitrate.

(*f*) The ammonia oxidation process provides a means whereby, during a state of war, the importation of Chile nitrate would be rendered unnecessary.

(*g*) The world's demand for combined nitrogen appears to double every ten years. The increased production during the war has not been more than the normal rate of increase during peace.

(*h*) The actual consumption of combined nitrogen for agriculture in the United Kingdom has practically doubled during the war, and there is certain to be a further increase.

(*i*) No very large increase in the output of by-product ammonia in Great Britain in the immediate future seems probable.

655. The specific recommendations of the committee are set out under various headings, and it will be observed that they embody the main recommendations put forward in the interim report (Appendix I). After mature consideration, the committee sees no reason for modifying its interim recommendations and desires to reaffirm them.

PROVISION FOR NATIONAL SAFETY.

656. The following measures are recommended by the committee as a minimum provision for safeguarding the future and for meeting a portion of the growing home demand for various nitrogen products.

*Calcium cyanamide process.*—The committee recommends that (*i*) This process should be established in Great Britain without delay, either by private enterprise (supported, if necessary, by the Government) or as a public work.

(*ii*) The scale of manufacture should be sufficient to give an output of about 60,000 tons of cyanamide per annum, equivalent on the basis of combined nitrogen to about one-eighth of the present home production of ammonium sulphate.

(*iii*) The necessary electrical energy should be obtained either from water power in Scotland or from a large steam-power station.

The committee has ascertained from the water power resources committee of the board of trade that there are several sites in Scotland where the necessary water power can be developed at a reasonable cost. If steam power is used, a suitable site for the cyanamide factory might be obtained at one of the capital power stations proposed by the board of trade committee on electric power supply (Cd. 9062, 1918), and the costs given hereunder are based upon that assumption.

On the basis of prewar prices plus 50 per cent, the approximate capital outlay at a water-power site would be £1,680,000, inclusive of the capital cost of the hydro-electric development, the latter being taken at £40 per electric horsepower (£53.6 per kilowatt) of maximum demand. If the factory were erected at the site of a large steam-power station, the approximate outlay would be £800,000, inclusive of the proportionate cost of the power plant. The chemical section for

either site would cost about £445,000 of the above totals.

Upon the same basis (*i. e.*, prewar prices plus 50 per cent), the approximate cost, at the factory, of raw cyanamide (19.5 per cent nitrogen) would be—

TABLE 72.—*Estimated post-war factory costs of raw cyanamid.*

| Source of power. | Price of electrical energy per kilowatt year. | Factory costs per metric ton of— Raw product (19.5 per cent nitrogen). | Combined nitrogen as raw cyanamid. |
|---|---|---|---|
| Water | £4.0 | £6.4 | £32.8 |
| Steam (with coal at 11s. 3d. per ton) | 5.6 | 7.0 | 36.0 |

The factory costs include interest on the capital outlay for the power section of the plant, but not on the chemical section, and are exclusive of any royalties.

The committee has ascertained that plans and working drawings of the chemical sections of the plant can be obtained for a reasonable consideration. Moreover, as the result of the action taken upon the committee's interim recommendations (Appendix I), considerable progress was made with the plans and specifications for a suitable steam-power station designed as the nucleus of a possible capital power station. These plans and specifications are available.

The committee suggests that it might prove desirable, in the first instance, to arrange for a certain proportion of the calcium carbide produced as an intermediate product to be utilized as such instead of converting it into cyanamid.

At the date of the interim report (Appendix I) the committee was informed by the board of agriculture that the establishment of the calcium cyanamid

industry in this country would meet with their approval. As the outcome of a recent communication, the committee is authorized to state that the board are still of opinion that the establishment of this process would be beneficial.

*Synthetic ammonia (Haber) process.*—This process has hitherto only been operated on a full commercial scale in Germany. Nevertheless, as a result of the continuous experiments carried out since the summer of 1916 at the Research Laboratory of the Munitions Inventions Department, the Government decided early in 1918 to erect a large factory at Billingham-on-Tees for the manufacture of synthetic ammonia and ammonium nitrate. This factory, projected as an emergency war measure, did not reach an advanced stage through causes which it is unnecessary to specify and in view of the altered situation the need for the completion of the factory as an ammonium nitrate project no longer exists.

The committee, nevertheless, recommends that the synthetic ammonia process should be established forthwith on a commercial unit scale and extended as rapidly as possible as a post-war measure, up to a minimum manufacturing scale of 10,000 tons of ammonia (equivalent to 40,000 tons of ammonium sulphate) per annum. The Billingham factory should be utilized for the purpose if such a course is practicable.

The evidence on the question of capital cost is somewhat uncertain, but the outlay for a factory of the capacity indicated, on the basis of pre-war prices plus 50 per cent, would probably amount to £600,000 if ammonia were the end product or to £780,000 if the factory were laid out for the manufacture of synthetic ammonium sulphate.

*Ammonia oxidation process.*—This process, in its modern developments, has been proved to afford a reliable and simple means of obtaining nitric acid and

nitrates. Early in the war a full-scale installation was erected on the Thames by private enterprise, supported by the Government, the older method of oxidation being utilized. A long series of experiments carried out at the research laboratory of the department resulted in the design of a simple and modified plant which has been installed on a trial scale at several works in the country. The designs of the ammonia oxidation section of the Government ammonium nitrate factory referred to above were based upon the results obtained in these research and trial operations.

The committee recommends that (*i*) An ammonia oxidation plant should be completed in conjunction with the synthetic ammonia factory already referred to, as was originally contemplated by the Government, on a scale sufficient to produce about 10,000 tons of strong nitric acid (95 per cent) per annum, or its equivalent in nitrates.

(*ii*) The plant should be designed to utilize either synthetic or by-product ammonia as a raw material, because the national interests demand that adequate experience in the production of nitric acid from ammonia from all sources should be available in this country.

Upon the basis of prewar prices plus 50 per cent., the estimated capital outlay for an installation having a capacity of 10,000 tons of strong nitric acid (calculated as 100 per cent) per annum would be £120,000.

The process, when thoroughly tested, will probably lead to the ultimate abandonment of the older retort method of producing nitric acid from Chile nitrate, and also to the abandonment of nitric pots in chamber sulphuric acid manufacture.

BY-PRODUCT AMMONIA INDUSTRIES.

657. The committee makes the following recommendations for conserving and increasing the output of combined nitrogen from existing by-product am-

monia industries for securing the better utilization of the national resources in coal, and for reducing the consumption of raw coal as a fuel.

The committee recommends that (*i*) Encouragement should be given to facilitate and to insure the replacement of nonrecovery coke ovens by recovery ovens at a much more rapid rate than hitherto, in order that the reserves of coking coal shall be utilized to the maximum advantage.

(*ii*) It should be incumbent on all gas works which now contribute to the home supplies of ammonia nitrogen to put into practice the various simple expedients that have been proved to result in a considerable diminution in the loss of ammonia by volatilization or otherwise. The statutory powers administered by the local government board through the chief inspector of alkali works, should, if necessary, be extended to insure that this is done.

(*iii*) In collaboration with the responsible organization of the gas industry, a comprehensive scheme of ammonia recovery and collection (including distribution of sulphuric acid) should be devised, which will be economically applicable to as many as possible of the smaller works where ammonia is at present allowed to run to waste. Wherever it can be shown that no financial loss would be incurred by any works included in the scheme, the works should be required, in the national interests, to cooperate. When a scheme has been devised, powers should, if necessary, be conferred upon the local government board to insure its operation and administration.

(*iv*) In collaboration with the responsible organizations of the by-product ammonia industries, definite standards of efficiency in ammonia recovery should be formulated (based upon the qualities of coal in use and upon good average practice realized under the conditions in force at by-product recovery installations of

various classes and sizes), and all works contributing toward the home supplies of ammonia should be required to conform to appropriate standards of recovery. When such standards have been formulated, powers should, if necessary, be conferred upon the local government board to insure their observance.

(*v*) Encouragement should be given to all efforts to extend the use of coal gas and coke in the place of raw coal for domestic purposes, for steam raising, and for other industrial requirements.

TRIAL OPERATIONS AND RESEARCH.

658. With regard to the trial in the United Kingdom of various nitrogen fixation and recovery processes, and to the general question of research upon the nitrogen problem, the committee makes the following recommendations:

*Hausser (or explosion) process.*—The committee recommends that plans and estimates should be prepared for a plant of the smallest size sufficient for the thorough testing of the modified process (par. 278) by which nitric acid and power can be obtained simultaneously. In the event of the estimates proving favorable, a company possessing a coke-oven installation of the necessary capacity, or other suitable supply of gas, should be encouraged to erect the plant and carry out the trials.

*Cyanide processes.*—The barium process, using externally heated retorts, is at present under trial in this country.

The committee recommends that steps should be taken to test, by means of a trial plant on a small works scale, other modifications of the processes, and especially internal electrical heating. The problem of devising a continuous process for the production of ammonia should be thoroughly investigated at the same plant.

*Low temperature carbonization of coal.*—This subject is under investigation by the Fuel Research Board.

The committee recommends that any commercial plant erected or about to be erected in this country should be thoroughly tested. In the national interests, the trials should be organized and carried out by the Government.

*Sulphate recovery processes.*—The committee recommends that the possibilities of sulphate recovery processes which avoid the use of sulphuric acid (par. 626) should be thoroughly investigated on a commercial scale, and encouragement and assistance should be given to companies and undertakings willing to carry out the trials for the benefit of the by-product ammonia industries as a whole.

RESEARCH.

The committee recommends that (*i*) The researches on the nitrogen problem initiated during the war should be continued after the war under the auspices of the Government for the general benefit of the country.

(*ii*) The results of the researches carried out up to the present date should be edited and published at the earliest possible moment as a further appendix to this report, subject to such reservations as may be considered necessary by the Government.

(*iii*) Members of the research staff of the munitions inventions department should be allowed to communicate to scientific societies the details of the work they have been engaged upon, subject to such reservations as may be considered necessary by the Government.

IMPERIAL SUPPLIES.

659. The committee recommends that a coordinated policy should be framed for safeguarding the future nitrogen requirements of the Empire, and this should be done by an imperial authority.

As the information already available concerning the future prospects and possibilities in the different portions of the Empire will require to be supplemented before such a policy can be framed, the committee suggests that advisory bodies should be set up to examine the local aspects of the nitrogen problem and to furnish the imperial authority with the requisite data.

OTHER RECOMMENDATIONS.

660. In connection with other aspects of the committee's inquiry, the following additional matters arise.

*Oxygen and other by-products from nitrogen plants.*—The committee recommends that (*i*) All liquid air nitrogen plants used in connection with nitrogen fixation installations in the United Kingdom should be operated to the maximum advantage for supplying the growing home demand for oxygen and argon.

(*ii*) The imposition of restrictive trade agreements—such as have been operative at nitrogen fixation installations abroad—which prevent the recovery and utilization of by-product oxygen from nitrogen plants should not be permitted in this country.

STATISTICS.

The committee recommends that comprehensive annual statistics for the nitrogen industries of the United Kingdom and for the home consumption of coal by various classes of users and industries should be officially collected and a detailed summary of the figures should be published. Strong representations on this subject should be made to the Government departments concerned.

The committee suggests that the question of statistics is also worthy of the attention of the overseas governments.

## PLAINTIFF'S EXHIBIT No. 655.

GENERAL CHEMICAL COMPANY
with
UNITED STATES OF AMERICA

ARTICLES OF AGREEMENT

Dated April 23, 1919.

These ARTICLES OF AGREEMENT entered into this 23rd day of April, 1919, by and between General Chemical Company, a corporation organized under and by virtue of the Laws of the State of New York (hereinafter called the "Contracting Corporation"), of the first part, and the United States of America (hereinafter called the "Government"), by A. G. Glasgow, Fixed Nitrogen Administrator, acting by authority of the Secretary of War, of the second part, WITNESSETH: That

WHEREAS the parties to this agreement have been mutually co-operating in the attempt to bring to completion and successful operation one or more of the three units for the production of anhydrous ammonia at the Government plant known as U. S. Nitrate Plant No. 1, at Sheffield, Alabama, employing apparatus and processes for the fixation of nitrogen devised by the Contracting Corporation; and

WHEREAS in the latter part of 1918, following the Armistice, work at said plant was discontinued by the Government, at which time none of said ammonia units had yet been brought to a stage of operation satisfactory to either party; and

WHEREAS the Contracting Corporation, although not under any obligation to do so, is willing to bear the expense of continuing this work as hereinafter provided, for the mutual advantage of both parties;

NOW, THEREFORE, said parties hereto hereby agree with each other as follows:

I. The Government agrees that, during the contract period hereinafter defined, the Contracting Corporation shall have complete, direct and unhindered possession, charge, control and use of all parts of said U. S. Nitrate Plant No. 1, necessary or useful for or in connection with the production of ammonia, including the buildings and contents known as the power-house, gas-house, process building, shops, storehouse, aqua-ammonia plant and storage equipment, water pump house, filter plant, chemical laboratory, offices, dwelling houses and barracks (excepting such dwelling houses and office buildings as the Government may desire for its own use, provided the same are not required for the use of the Contracting Corporation), and all piping, wiring and other connections between said various parts (hereinafter called collectively the "Plant"), and also all the Government's materials and supplies for construction or operation of said U. S. Nitrate Plant No. 1, whether now on hand or hereafter delivered, provided that the Government shall continue in possession, charge and control of said materials and supplies until the same shall be specifically demanded by the Contracting Corporation. The Government will freely co-operate with the Contracting Corporation in every reasonable way desired by it in connection with its work hereunder, not involving extra expense to the Government. Thus, the Government will afford the Contracting Corporation the benefit of all the Government's rights against others in respect of the erection of the Plant, the furnishing of apparatus, materials and supplies therefor and the remedying of defects therein.

II. The Government shall be under no liability or obligation to the Contracting Corporation with respect to any expense incurred by the latter in connection with

the Plant during said contract period (whether for construction, repair, alteration, maintenance, research or operation); but all product of the Plant during said period shall be the property of the Contracting Corporation to dispose of as it sees fit. If the Contracting Corporation's aggregate receipts from disposal of such product, plus any amount received by it from the Government as compensation under Clause IV hereof, shall exceed the aggregate expenses of the Contracting Corporation in connection with the Plant during said contract period (whether for construction, repair, alteration, maintenance, research or operation), it will pay to the Government the amount of such excess as promptly as practicable after the end of said period.

III. Said contract period shall be three years from the tenth day following the date of final execution and delivery of this contract, except that the Contracting Corporation may at its option terminate the same at any time after one year from the beginning of said period, by giving the Government at least 30 days' advance written notice to that effect, and except, further, that the Government may likewise terminate the same at any time after said one year as hereinafter provided in Clause IV and in the event there stated.

IV. During said contract period, the Contracting Corporation shall at its own expense endeavor diligently and in good faith, and with due regard for economy, to put and keep one or more of said three ammonia units in regular operation, jointly or alternately, and, for that purpose, shall have the right to complete, maintain, repair, alter and operate all or any part of the Plant in such manner, to such extent and at such times within said period as it may desire, including the right to use free of charge all or any

part of the Government's above mentioned materials and supplies; and the Contracting Corporation agrees to expend in and in connection with its said work during the first year of said contract period not less than $500,000 in the aggregate (nor, except at its option, more than $500,000); provided that the Contracting Corporation shall not be responsible for any interruption or delay, at any time during said contract period, either in said work or in the expenditure of any amount in that connection, if such interruption or delay shall be occasioned by non-delivery of necessary materials or supplies, strike, labor trouble, fire, accident, or other cause beyond its control. If at any time after the first year of said contract period, the Contracting Corporation shall abandon the work or shall cease to prosecute the work with due diligence, then and in such event the Government may at its option terminate said contract period by giving the Contracting Corporation at least 30 days' advance written notice to that effect, including a statement of the facts upon which such action is based; provided that, if the Contracting Corporation shall dispute the alleged justification for such termination and shall elect to refer such dispute to arbitration as hereinafter provided in Clause X and shall promptly do all things to be done on its part to that end, such notice of termination shall be effective only upon the arbitrators' determination of such dispute in favor of the Government, and in that event such termination shall take effect within 30 days thereafter. In the event of any such termination and acceptance thereof by the Contracting Corporation without arbitration as to the justification therefor, the Government will pay to the Contracting Corporation, promptly thereafter, as compensation, the reasonable value of any structural im-

provements to the Plant made during said contract period at the expense of the Contracting Corporation; it being contemplated that such value shall be determined by arbitration as hereinafter provided in Clause X and that the arbitrators selected by the parties for that purpose shall have the requisite technical knowledge.

V. At the end of said contract period, whether by expiration or by termination as hereinbefore provided, the Contracting Corporation shall return the Plant to the Government in not less valuable condition, structurally and otherwise, than at the beginning of said period, excepting ordinary wear and tear, and excepting damage or destruction by fire, accident or other casualty unless due to the negligence of the Contracting Corporation. The Contracting Corporation shall be under no liability or obligation to the Government in connection with the Plant other or further than as herein provided.

VI. During said contract period the Government shall at its own expense guard the complete U. S. Nitrate Plant No. 1 against intruders, but the Contracting Corporation may in addition at its own expense guard those parts of said plant under its control. The Contracting Corporation will maintain reasonably adequate employer's liability insurance covering its employees at the Plant during the contract period. The Contracting Corporation shall not be obliged to insure any part of the Plant against damage or destruction by fire, accident or other casualty, and shall not be responsible for any such damage or destruction unless due to its negligence.

VII. Upon reasonable notice from the Government, the Contracting Corporation will, from time to time during said contract period, furnish to the Government at cost, power, light and water, as required

by it for its own use on the Government reservation for U. S. Nitrate Plant No. 1, to the extent of any then unused capacity of the facilities for that purpose under the control of the Contracting Corporation. The Contracting Corporation will not sell any power, light or water from the Plant without permission of the Government.

VIII. At all times during said contract period the duly accredited representatives of the Government, acting exclusively for the Government, shall have free access to the Plant and the right to inspect the same and all operations there conducted or incidental thereto and all records thereof, in any manner and to any extent not interfering with the work of the Contracting Corporation.

IX. The agreement between the parties hereto embodied in the Contracting Corporation's offer to the President dated June 5, 1917, accepted on behalf of the President by the Secretary of War under date of July 14, 1917, is hereby amended as follows: (1) The Government's rights under said agreement to use the apparatus and processes therein described are restricted to its operation of said three ammonia units already constructed or partly constructed at U. S. Nitrate Plant No. 1 and any similar units which may be hereafter constructed at said plant; and the Government agrees not to use the same elsewhere. (2) The Contracting Corporation releases the Government from all obligation to it by way of royalty for such use at said plant. (3) In view of the difficulty experienced by the Government in preventing disclosure of said apparatus and processes by its representatives, the Contracting Corporation releases the Government from any pecuniary liability on account of any such disclosure subsequent to said contract period; and each of the parties releases all its rights under

said agreement to know or use any improvement or invention hereafter discovered, invented or installed by the other, except improvements developed during said contract period; but the Government will nevertheless take all such measures as it reasonably and conveniently can at all times, both during and after said contract period, to prevent disclosure of any of said apparatus and processes or any such improvement or invention. (4) The Government releases the Contracting Corporation from all obligation under said agreement to place its staff at the Government's disposal, except as provided in this agreement. (5) Subject only to the modifications above specified, said agreement is confirmed.

X. In the event of any dispute between the parties hereto either under this agreement or under said agreement of June 5-July 14, 1917, the same shall be promptly referred to arbitration by both parties in the following manner, at the election of either party, evidenced by written notice to the other to that effect specifying the issue, viz.: Promptly after such notice each party shall select one arbitrator and notify the other of such selection. Promptly thereafter such two arbitrators shall jointly select a third, or, in default thereof, said third arbitrator shall be selected by the United States District Court for the Southern District of New York, or by any judge of said Court, upon the application of either party after due notice to the other. Except as herein provided, the arbitration proceedings shall be conducted in such manner and form as the arbitrators shall deem proper. The concurrence of any two of the arbitrators shall control their determination of all questions whether of form or substance. The determination by the arbitrators of any dispute referred to them as aforesaid shall be made in writing, signed by at least two of the arbi-

trators and delivered to each of the parties, and when so made shall be final and binding on both parties.

WITNESS the due execution of this Agreement in duplicate by said parties hereto on the date first mentioned.

GENERAL CHEMICAL COMPANY,
By (Sgd.) W. H. NICHOLS, JR.,
*President.*

ATTEST:
(Sgd.) CHAS. W. MILLAUX,
*Asst. Secretary.*

UNITED STATES OF AMERICA,
By .....
*Fixed Nitrogen Administrator.*

Witness:

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**PLAINTIFF'S EXHIBIT No. 655-A.**

GENERAL CHEMICAL COMPANY
office of the
CHAIRMAN OF THE BOARD
25 BROAD STREET
NEW YORK

April 23, 1919.

Arthur S. Glasgow, Esq.,
U. S. Fixed Nitrogen Administrator,
1640 Rhode Island Avenue,
Washington, D. C.

My dear Mr. Glasgow:

I enclose agreement (two copies) executed by the General Chemical Company, covering our initial operation of the Government's ammonia plant at Sheffield, which I think you will find fully meets the Govern-

ment's wishes as expressed by you at our conference last Friday on the two substantial points which were then left in issue, viz.: (1) Our undertaking to expend $500,000; and (2) the release of the Government from all royalty obligation with respect to future extensions at Sheffield. The second recital has also been slightly modified to accord with the facts. In other respects, the enclosed form is as we agreed upon on Friday.

As I think you appreciate, this agreement is far from attractive to us as regards our material interests, but we have concluded, nevertheless, to go thus far to meet the Government's wishes in the matter, as you requested.

Assuming that the matter may now be regarded as settled, we should, of course, like to start work with the least possible delay, and to this end we would ask that you execute and return one of the enclosed copies of the agreement as promptly as practicable. As you will see, we have assumed your legal authority to sign the contract alone on behalf of the Government, but you will, of course, know best whether any further signature is necessary or desirable. In any case, we are relying upon you to see that the contract is so executed as to bind the government without question.

Permit me to assure you of our confidence that so long as you continue in charge for the Government there will be no difficulties in carrying out this agreement which mutual good faith and good-will can prevent.

Yours very truly,

(Sgd.) WM. H. NICHOLS,

*Chairman.*

Encls.

**PLAINTIFF'S EXHIBIT No. 656.**

GENERAL CHEMICAL COMPANY

25 Broad Street
New York
April 19th 1918

Acting Chief of Ordnance
U. S. Army
Washington, D. C.
(Attention Col. J. W. Joyes
In Charge Nitrate Division)

Dear Sir:—

In compliance with request of the Chief of Ordnance, U. S. Navy, you are hereby authorized to permit inspection of the Synthetic Ammonia Processes at Sheffield, Alabama, by any officer designated by the Navy, and we further grant authority to the U. S. Army to instruct the Navy fully and freely in regard to the Synthetic Ammonia Processes owned and controlled by the General Chemical Company.

We do this with the understanding that all reasonable means will be exercised by the Navy Department to preserve our rights in the Synthetic Ammonia Processes unimpaired, and that every officer of the Government who receives information or instruction regarding said processes will be cautioned as to the rights which are reserved to us and will be directed to recognize those rights in accordance with our Agreement with the Government, to-wit:

> "5. It is understood that for all purposes of this agreement and generally so far as concerns the use of said processes or any part thereof, by the Government, its agents or other parties claiming under it, it and they shall at all times acknowledge and recognize the General Chemical Company as the sole owner of said processes and

of the exclusive right to use the same subject only to the rights granted to the Government pursuant to this tender, and shall so far as practicable, exclude the public from all works in which said processes shall be employed, and, generally, shall use all reasonable means to preserve said rights unimpaired."

Yours very truly,

GENERAL CHEMICAL COMPANY.

HW/EH per

(Sd)

*Vice-President.*

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**PLAINTIFF'S EXHIBIT No. 657.**

AMERICAN DYES INSTITUTE—CHRONOLOGY FROM MAY 23, 1919, TO DECEMBER 21, 1921.

May 23, 1919: First bill for protection of dyestuffs industry introduced in the House of Representatives by Congressman Longworth of Ohio. Bill known as H. R. 2706. Purely a tariff measure. It was at once referred to the Committee on Ways and Means.

June 6, 1919: Legislative committee of the American Dyes Institute appointed with power. Committee consisted of Mr. R. Poucher, chairman; R. T. Baldwin; and R. C. Jeffcott.

June 18, 1919: Hearings began before the Ways and Means Committee and continued through June 20, 1919.

June 23, 1919: A substitute bill for the protection of the American dyes industry was introduced by Congressman Longworth. It carried the same number as the original bill. It provided for a licensing plan to be administered by a dye licensing committee to consist of 11 commissioners who should be appointed by the President; 5 commissioners to represent manu-

facturers of coal-tar dyestuffs, 5 to represent consumers of coal-tar products and 1, not actively connected with any phase of the dyestuffs industry or the consumption of its products, who should be chairman.

July 14, 1919: Hearings reopened before the Ways and Means Committee and continued through July, 18.

July 31, 1919: Congressman Longworth introduced a third bill known as H. R. 8078. That bill made a change in the personnel of the dye licensing committee providing that 1 commissioner should be appointed by the National Association of Wool Manufacturers, 1 by the American Association of Woolen and Worsted Manufacturers, 1 by the National Council of American Cotton Manufacturers, 1 by the National Association of Finishers of Cotton Fabrics, 1 by the Silk Association of America, 1 by the American Paper and Pulp Association, 3 by the American Dyes Institute, 1 by the American Drug Manufacturers, these 10 to elect the eleventh commissioner who was not to be identified with the industry either in its manufacturing or its consuming phase.

August 1, 1919: Bill reported from the Ways and Means Committee to the House of Representatives by Congressman Longworth recommending the passage of the bill as voicing the views of the majority of the Republican Members of that committee. There was a minority report by Congressman Moore of Philadelphia, Mott of New York, and Young of North Dakota.

September 22, 1919: The bill which had calendar No. 61 was called up in the Committee of the Whole House on the state of the Union. The arguments for and against the bill continued until Friday, September 26, when late in the afternoon the bill was passed by a vote of 156 to 119. The only important change made in the bill was an amendment striking out the Dye Licensing Commission section and placing the entire

control of the licensing of imports in the hands of the United States Tariff Commission.

September 29, 1919: Bill sent to Senate from House of Representatives. It was referred to the Committee on Finance.

November 10, 1919: Senator Penrose, chairman of Committee on Finance, introduced a joint resolution known as Senate Joint Resolution 125, providing for a continuance of the powers of the War Trade Board in case during the recess of Congress about to take place there should be a declaration of peace.

November 18, 1919: Joint resolution 249 passed the Senate. A similar resolution, which had been introduced in the House of Representatives by Congressman Green, known as House Joint Resolution 249, passed the House on the same day. The joint resolution extended the powers of the War Trade Board in case peace should be declarerd until January 15, 1920.

November 19, 1919: Congress adjourned, thus ending the special session which had convened May 19, 1919.

December 1, 1919: Congress assembled in regular session.

December 4, 1919: The Senate Finance Committee appointed a subcommittee to consider the Longworth bill (H. R. 8078). That committee consisted of the following:

Republicans: James E. Watson, of Indiana, chairman; Howard Sutherland, West Virginia; Charles Curtis, Kansas; William M. Calder, New York.

Democrats: Furnifold McL. Simmons, North Carolina; Andrieus A. Jones, New Mexico; John F. Nugent, Idaho.

December 8, 1919: Hearings began before the above-named subcommittee and continued throughout the week, closing late Saturday p. m., December 13.

January 12, 1920: Hearings were reopened to consider some amendments which had been suggested by the opposition to the bill.

January 30, 1920: Subcommittee finally agreed upon a bill which was submitted to the entire Finance Committee, which was approved by the latter and was ordered to be reported favorably.

February 14, 1920: Bill reported to the Senate by order of the Finance Committee and its passage advocated in a report made by Senator Watson, chairman of the subcommittee. The report was numbered 425. There was no minority report. The bill received the calendar No. 380.

February 21, 1920: Senator Spencer of Missouri introduced an amendment to which there was no opposition, providing for the inclusion in the bill, of camphor, natural and synthetic, crude and refined with a duty of 25 per cent.; caffeine, with a duty of $1.50 a pound; chloral hydrate, with a duty of 15 cents a pound.

February 25, 1920: Senator Watson called up the bill. It was debated during the afternoon. No vote was taken on the bill itself although the vote to take it up was 57 in favor of its consideration to 11 opposed.

March 11, 1920: Senator Keyes of New Hampshire introduced four amendments. These, with certain changes in phraseology, were afterwards agreed to.

March 11, 1920: Senator Moses of New Hampshire introduced an amendment changing the character of the bill. That amendment was not incorporated in the bill.

May 1, 1920: Senator Watson called up the bill again. Senator Frelinghuysen of New Jersey occupied the afternoon in advocating the passage of the bill.

May 5, 1920: Senator Thomas of Colorado spoke during all the available time up to and including Friday afternoon, May 7, in opposing the bill.

May 8, 1920: Senator Nugent spoke, favoring the bill.

May 10, 1920: The bill was called up again, but as a filibuster which had been started by Senator Thomas was to continue, the bill was temporarily laid aside for the shipping bill although it was to keep its number on the calendar so that it could be called up again in case there was opportunity so to call it up before the adjournment of Congress which was scheduled for June 5, 1920.

May 11, 1920: Senator Moses of New Hampshire introduced another amendment as a substitute for the one of March 11. Nothing was done with it.

May 18, 1920: The executive committee of the American Dyes Institute added three members to serve on its legislative committee. These were J. R. M. Klotz, A. C. Burrage, Jr., and Samuel Iserman.

May, 1920: The War Trade Board by Executive order had been transferred to the Department of State, and was designated as the War Trade Board section of that department. The House of Representatives had not made any provision for funds for that section. Its available funds would last only to the end of the fiscal year, or June 30, 1920. The Senate inserted a provision for that section. In conference between the House and the Senate the amount allotted by the Senate was cut down, but still there was allowed to remain in the emergency deficiency bill an appropriation which would allow the War Trade Board section to function after June 30, 1920.

June 3, 1920: Senator Frelinghuysen, of New Jersey, introduced into the Record a statement signed by 63 of the smaller manufacturers requesting the passage of the bill.

June 5, 1920: Congress adjourned to reconvene in regular session, Monday, December 6, 1920.

December 6, 1920: During the session from that

date to March 4, 1921, when the Sixty-sixth Congress expired at noontime by constitutional limitation, nothing of importance was done concerning the dyestuff legislation.

April 11, 1921: The Sixty-seventh Congress convened in special session on call of the new President, the Hon. Warren G. Harding. Prior to the calling of that session the Ways and Means Committee of the House of Representatives had begun the consideration of a new tariff bill. That committee assigned to Congressmen Longworth, Copley and Hadley the study of the chemical schedule. That subcommittee, of which Congressman Longworth was chairman, did not call for any hearings because the testimony which had been taken before the committees of the Sixty-sixth Congress was so complete that it was not considered necessary again to go over that portion of the schedule affecting coal-tar products.

April 15, 1921: The House of Representatives not having completed the tariff bill passed an emergency tariff bill, to be operative for six months from its final passage. That bill was sent to the Senate. It did not contain any provisions for the dyestuff industry.

April 18, 1921: The Senate Finance Committee began hearings on the emergency tariff bill.

April 26, 1921: Hearings closed on that day. Senator Knox of Pennsylvania had submitted to the Finance Committee an amendment to the emergency tariff bill providing for the protection of the dyestuffs industry during the life of that bill.

April 30, 1921: The Senate Finance Committee reported the emergency tariff bill with numerous changes, including the amendment submitted by Senator Knox, which became title 5 of that bill. The bill was placed on the calendar of the Senate with the No. 17, the report of the Finance Committee being No. 16.

May 2, 1921: The emergency tariff bill was, with the report on it, laid before the Senate by Senator Penrose, chairman of the Finance Committee.

May 3, 1921: The bill was called up again, but consideration was postponed until the following day, namely, May 4.

May 4, 1921: The bill was called up, was read with amendments embodied in it by the Senate Finance Committee. The discussion of the measure began.

May 5, 1921: Further discussion of the bill.

May 6, 1921: Again there was discussion. Before the close of the session Senator Penrose introduced an agreement calling for unanimous consent, which, if adopted, would close the discussion on Wednesday, May 11, at 12 o'clock noon, and which provided that the final vote be taken at 3 o'clock that afternoon, and further that between 12 o'clock noon and 3 o'clock in the afternoon no Senator should speak more than once or longer than 10 minutes upon the bill, or more than once or longer than 10 minutes upon any amendment offered to the bill. The agreement was adopted.

May 7, 1921: Again there was discussion.

May 9, 1921: Further discussion.

May 10, 1921: Again the day was occupied in discussion.

May 11, 1921: Pursuant to the agreement which had been entered into the discussion was closed at 12 o'clock noon, and thereafter until 3 o'clock only 10 minutes were allowed to any Senator who desired to speak on the bill or to speak upon any amendment. Numerous amendments were offered from the floor, but these were all defeated. The amendments which emanated from the Finance Committee were all carried, including the one embodying title 5, by a vote of 61 to 25. The entire bill when put to final vote was carried by 63 to 28. As there were changes made in

the bill as it came from the House, Senator Penrose asked for a conference between the two Houses. The Vice President, as President of the Senate, appointed the following as the conferees from that body, namely, Senators Penrose, McCumber, and Smoot, Republicans; and Senators Simmons and Williams, Democrats.

May 12, 1921: The Speaker of the House appointed as conferees representing the House of Representatives, Congressmen Fordney, Green and Longworth, Republicans; and Congressmen Garner and Collier, Democrats.

May 20, 1921: The conference report was presented to the Senate, and, after some discussion, was adopted by a vote of 53 to 25. In the conference report, the period of time during which title 5 was to be operative was cut down from six months to three months.

May 23, 1921: The conference report which had been presented to the House on May 20, was, after discussion, adopted by a vote of 246 to 98.

May 27, 1921: The President signed the emergency tariff bill, which, by its terms, became a law immediately. The limitation of time therefore for the general bill would expire November 27, 1921, while the limitation of time for the dyestuff section or title 5, would expire August 27, 1921.

June 29, 1921: Congressman Fordney, chairman of the Ways and Means Committee, announced to the House that the permanent tariff bill had been completed and was ready for submission. With the bill there were three reports—one, by the majority of the committee favoring the bill; another one by Congressman Frear, of that committee, criticizing many of the schedules and more particularly that portion thereof providing for the protection of the dyestuff industry; and the third, filed by the minority leader, Congressman Kitchin, opposing the entire measure.

The reports are printed together on the date of July 6, 1921, and the pamphlet is known as report No. 248, divided into parts 1, 2, and 3. The bill is designated as H. R. 7456, and bears the Union Calendar No. 110, Title 1, paragraphs 25 to 27, both inclusive, provides the form of legislation which the committee had prepared for the dyestuff industry.

July 6, 1921: The debate on the bill began in the House of Representatives which sat as the Committee of the Whole on the state of the Union. It was agreed that certain disputed schedules on which the majority of the committee had not been a unit should be voted on separately.

July 16, 1921: Under that agreement Congressman Frear moved to strike out the dyestuff section. The motion was lost by a vote of 106 to 122. The vote in Committee of the Whole was not a recorded one but was counted by tellers.

July 21, 1921: After daily debate, the Committee of the Whole rose and the bill itself came before the House in regular session. The disputed schedules again were voted on separately but with a recorded vote. Congressman Frear renewed his motion to strike out the dyestuff section and that time the motion was carried by a vote of 209 to 193. That vote, therefore, eliminated that part of the chemical schedule of the permanent tariff bill which sought to protect the dyestuff industry. The bill with its various amendments was finally passed by the House that same afternoon.

July 22, 1921: The bill was sent to the Senate, where it was referred to the Committee on Finance, retaining the House designating number H. R. 7456.

July 25, 1921: The Senate Finance Committee began hearings on the bill and continued them up to and including August 17, 1921. Testimony was offered by

the dye industry favoring the protection of that industry.

August 8, 1921: Congressman Longworth introduced in the House of Representatives a bill to extend the dye-licensing feature of the emergency tariff law from August 27, 1921.

August 9, 1921: The Ways and Means Committee of the House favorably reported the Longworth bill providing for the extension of time for the dyestuff portion of the emergency tariff bill for three months after August 27, 1921, or until November 27, 1921, making, therefore, this expiration coterminous with that of the emergency tariff bill itself.

August 11, 1921: Congressman Longworth read into the record a letter from President Harding advocating the adoption of the extension of time. On that date the House, by a vote of 196 to 91, passed the extension act. The bill was at once sent to the Senate.

August 25, 1921: The Senate, by a vote of 29 to 22, passed the extension act just as it came from the House, and the President signed the bill.

November 8, 1921: The emergency tariff act, including the dye embargo section, extending the time for its termination until the action be repealed by the enactment of the pending permanent tariff bill, passed the Senate. The House concurred in this action by a vote of 233 to 93.

November 14, 1921: The bill was signed by the President.

**PLAINTIFF'S EXHIBIT No. 658.**

Form 14062

DuPont
Established 1802
E. I. du Pont de Nemours & Company
Incorporated
Wilmington, Delaware

Dyestuffs Sales Department
21 East 40th Street
New York City

August 15th, 1919.

Mr. W. R. Corwine,
c/o Wardman Park Inn,
Washington, D. C.

Dear Mr. Corwine:

In a letter from Mr. Poucher to-day he suggests inviting Dr. Herty to join the Executive Committee of the American Woolen Manufacturers Association when it is definitely settled as regards their visit to Marcus Hook and Deepwater. So will you be kind enough to carry this in your mind so as to notify Dr. Herty when arrangements to carry this plan out are complete. Dr. Herty states that he is very glad to accept and when the time comes he will consult with Mr. Baldwin so that Mr. Baldwin will know that he plans to join the party, which, of course, is the right way to do it and the courteous thing to do.

In order that you may know my correspondence with Mr. Poucher on several matters, attached you will find copy of letter to him to-day. I may not have all the facts about the cablegram perfectly correct but I think it will serve the purpose of making Mr. Poucher feel restful on the mysterious matter about which we wanted to reach him.

With kind regards, I am

Sincerely yours,

HGS:SMC (Sgd.) H. G. STEPHENSON.
Encl. 1.

**PLAINTIFF'S EXHIBIT No. 658-A.**

Copy to Mr. W. R. Corwine,
" " Mr. E. V. Patterson.

August 15th, 1919.

Mr. M. R. Poucher,
Sparhawk Hall,
Ogonquit, Wells, Me.
Dear Mr. Poucher:

Have received and carefully noted yours of August 13th, also your telegram of to-day suggesting that Dr. Herty telegraph you. Just before receiving the telegram I had consulted with Dr. Herty and Mr. Baldwin and found that the matter in question is not to be acted upon until the middle or latter part of next week, so it was not necessary to get into direct communication with you about it.

The story in this connection is that Dr. Herty received from Mr. Keohan, at Washington, a copy of a cablegram which was received by the State Department at Washington from Mr. Polk, who I understand is acting for Mr. Lansing. The gist of it is that there has been a meeting at Versailles between representatives of the English *dyestuff manufacturers* and representatives of *dye consumers* from France, Italy, and Belgium. This meeting was also in touch with a German representative. At this informal meeting France, Italy, and Belgium put forth their dire need for certain amounts of dyestuffs from Germany at once that their mills might immediately resume work. The discussions at this meeting were quite heated and it was finally decided to form a temporary commission to investigate the possibility of finding some way of anticipating the functioning of the Reparation Commission. England, at first, was quite averse to this but finally admitted that France particularly, as well as Italy

and Belgium, had need of certain dyes from Germany. It was also agreed that nothing could be done without the co-operation of the United States. As I remember it England particularly took this stand. Mr. Polk's cable expressed the urgent need of an expert representative of the United States dye industry being present over there.

Yesterday morning I went to Dr. Herty's office, at his request, to be present at a meeting to consider this matter. There were present at this meeting Mr. Baldwin, Dr. Matthews, Mr. Corwine, Dr. Herty, and Mr. Kalish. It was stated in the cable that France is particularly anxious to get 350 tons as soon as they can. At the meeting Mr. Kalish was strong for offering to furnish these goods from the United States. This did not seem feasible to me as I do not understand why Switzerland is suddenly out of the running, neither do we know what the colors are which France desires. It, of course, would not be wise for France to get the first chance at German vat colors at the expense of the other Allies' proportion later. Mr. Kalish telephoned Mr. Webber at Mr. Baldwin's request and Mr. Webber said his first impression was that he is opposed to it as he thought this to be the first of more demands to come upon us later. Late yesterday Mr. Keohan telephoned Dr. Herty that an answer to the cable has been postponed partly on account of the resignation of Mr. Dulles, now in Europe, and the matter of answering the cable is to be left until the State Department consults with the President next week. This is why we did not telegraph you further. Am unable to send you a copy of the cablegram because on account of it's private nature Dr. Herty is not permitted to have a copy made or to let it out of his office. Everybody feels that there is nothing at all urgent in connection with

this anyway until you return. Mr. Garvan, of course, is not in Washington. Of course, as mentioned in the cablegram, Germany is quite in accord with starting something pending operations of the Reparation Commission, stating that it would help her in knowing what the demands upon her would be.

As requested, I have made copies of your letter, received to-day, together with the marked portion of Mr. Corwine's telegram, which has been submitted to Dr. Herty. One set was also made for Mr. Patterson. This refers to the National Shirt Manufacturer's Association. Dr. Herty has already had some talk with Mr. Bennett about this matter and has written him a letter to-day, copy of which is attached. Dr. Herty feels that consideration should be given to their request for a hearing and believe that the Committee to hear them should consist of dyestuff consumers such as Mr. Hobbs and Mr. Cheney, perhaps, and Dr. Herty plans to be present himself. He thinks the result would be more effective than to have them tell their story to a committee of dyestuff manufacturers.

As regards the American Woolen Manufacturers Association. Mr. Corwine wrote you yesterday that this is having his attention. Had a talk with Mr. Hudson about it to-day and he is to put the matter before Mr. Hobbs with the idea that Mr. Hobbs shall see Mr. Metcalf, President of this association.

In regard to having the Executive Committee of this association visit the Marcus Hook and Deepwater Plants. Dr. Herty will be very glad indeed to join such a party if the thing goes through and will consult with Mr. Baldwin as regards the Marcus Hook part of it as soon as something definite is settled.

Am advising Mr. Corwine in full so that he will be informed as you suggested.

By the way, Dr. Herty mentioned that his letter to Mr. Bennett, copy of which is attached, and above referred to, will, of course, be presented to Mr. Bennett's secretary, Dr. Penniman, but he thought it best to write direct to Mr. Bennett first.

With kind regards.

Sincerely yours,

(Sgd.) H. G. STEPHENSON.

HGS:SMC

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**PLAINTIFF'S EXHIBIT No. 659.**

Copy to Mr. C. Cyril Bennett.

March 3, 1919.

Henry Howard, Esq.
Merrimac Chemical Co.,
Boston, Mass.

Dear Mr. Howard:

I am told today by the Alien Property Custodian that an executive order has been signed since the return of President Wilson and that the matter will progress rapidly from the side of the Government.

We are asked to be ready to meet the obligation probably within the next week or ten days.

I understand that your secretary sent out his letters to the members of your Association last week and I would ask that you keep our secretary Mr. C. Cyril Bennett, address 21 East 40th Street, New York advised.

It appears that the subscription has to date exceeded the capital stock of the Company and that a readjustment will be necessary. The Custodian imposed two conditions.

1. That we answer as quickly as possible whether or not the total amount could be subscribed between

the two organizations. This question has already been answered in the affirmative.

2. The condition that we have a maximum number of subscribers of minimum amount rather than minimum number of subscribers at maximum amount, or in other words the best would be for every member of both organizations to subscribe, even if the majority of them come in for only a small amount, say $500. The strength of the organization lies in numbers rather than money. We hope the result of it all will be something helpful to the Chemical Industry in this country for years to come.

Sincerely yours,

(Sgd.) M. R. POUCHER.

MRP*MC

## PLAINTIFF'S EXHIBIT No. 660.

OFFICERS
President
W. H. COTTINGHAM
The Sherwin-Williams Co.
Secretary-Treasurer
H. E. DANNER
Secretary
C. C. BENNETT
Counsel
ARTHUR J. EDDY
Executive Committee
L. A. AULT
FRANK HEMINGWAY
R. C. JEFFCOTT
MERRITT MATTHEWS
AUGUST MERZ
W. T. MILLER
M. R. POUCHER
Board of Governors
C. S. ALTHOUSE
The Althouse Chemical Co.
Reading, Pa.
B. R. ARMOUR
American Aniline Products, Inc.
New York City
L. A. AULT
The Ault & Wiborg Co.
Cincinnati, Ohio
R. P. DICKS
Dicks, David Co., Inc.
New York City
B. P. DONNELLY
Holland Aniline Co.
Holland, Mich.
FRANK HEMINGWAY
Frank Hemingway, Inc.
New York City
R. C. JEFFCOTT
Arden, Orth & Hastings Corp.
New York City
R. W. KEMP
Holliday-Kemp Co.
New York City
G. A. MARTIN
The Sherwin-Williams Co.
Cleveland, Ohio
J. M. MATTHEWS
The Grasselli Chemical Co.
Cleveland, Ohio
AUGUST MERZ
The Heller & Merz Co.
Newark, N. J.
W. T. MILLER
National Aniline & Chemical Co., Inc.
New York City
J. T. PARDEE
The Dow Chemical Co.
Midland, Mich.
E. W. PIERCE
Abel Color Works, Inc.
New York City
M. R. POUCHER
E. I. du Pont de Nemours & Co.
Wilmington, Del.
G. S. WHALEY
John Campbell & Co.
New York City
S. W. WILDER
Merrimac Chemical Co., Inc.
Boston, Mass.

AMERICAN DYES INSTITUTE
320 Broadway
New York

*The Association of dye-stuff manufacturers in the United States*

March 3, 1919.

C. Cyril Bennett, Esq.,
Secty. American Dyes Institute,
21 East 40 Street,
New York City.

Dear Mr. Bennett:

For the purpose of a record I enclose carbon copies of two letters.

Dr. Charles L. Reese, Chairman of the Dyes and Intermediates Division of the Chemical Alliance Inc. received a request from the President of the Alliance, Mr. Horace Bowker for a memorandum from the American Dyes Institute concerning the licensing of imports and asked that this be given to Mr. Charles H. MacDowell who will sail on S. S. Geo. Washington from New York on March 5th. for Paris. This at the request of President Wilson.

Mr. MacDowell will have in hand many matters touching the Chemical Industry and we have taken advantage of the opportunity to place in Mr. MacDowell's hands a memorandum in behalf of the Executive Committee; Copy enclosed. This memorandum has the endorsement of the Dye and Intermediates Division of the Chemical Alliance as you will see by the Chairman's letter of March 1st. to Mr. MacDowell, copy attached.

Very truly yours,
(Sgd.) M. R. POUCHER.

MRP*MC

## PLAINTIFF'S EXHIBIT No. 661.

Stipulation as to Plaintiff's Exhibits Nos. 336 to 338, both inclusive. (Printed at Page 683 of Exhibits.)

## PLAINTIFF'S EXHIBIT No. 662.

**E. I. duPONT de NEMOURS & COMPANY.**

**COMPLETE LIST OF FIRST PRODUCTION AND FIRST SALES OF PRODUCTS COVERED BY LICENSES FROM THE CHEMICAL FOUNDATION.**

| Name of Dye | Date of first Manufacture | Date of first Sales |
|---|---|---|
| Pontachrome Black 6BX (Fontachrome Blue Black R) | April 1919 | November 1919 |
| Ponsol Blue RP (Ponsol Paper Blue) | October 1921 | October 192[illegible] |
| Ponsol Violet R | October 1919 | December 1919 |
| Ponsol Violet RR | December 1919 | December 1919 |
| Ponsol Dark Blue BR | August 1919 | September 1919 |
| Ponsol Green B | September 1919 | September 1919 |
| Ponsol Black B | December 1919 | December 1919 |
| Ponsol Yellow G | November 1919 | December 1919 |
| Ponsol Blue G | November 1919 | December 1919 |
| Heliopont Blue R | June 1921 | June 1921 |
| Heliopont Green G | June 1921 | June 1921 |
| Heliopont Blue ME | April 1922 | May 1922 |
| Heliopont Pink G | June 1921 | June 1921 |
| Heliopont Blue G | June 1921 | June 1921 |
| Heliopont Blue 4G | June 1921 | June 1921 |
| Heliopont Blue M | February 1922 | March 1922 |
| Sulphogene Yellow GG | September 1919 | April 1920 |
| duPont Naphthanil AS | September 1921 | November 1921 |
| duPont Naphthanil BS | November 1921 | January 1922 |
| Sulphogene Bordeaux G | April 1922 | July 1922 |
| Sulphogene Bordeaux B | October 1919 | November 1919 |
| Sulphogene Bordeaux 5B | October 1922 | November 1922 |
| Sulphogene Ochre G | June 1922 | August 1922 |
| Sulphanthrene Pink FF | April 1923 | May 1923 |
| Pontacyl Fast Light Yellow 2G | November 1922 | December 1922 |
| Pontacyl Fast Light Yellow 3G | April 1923 | May 1923 |
| Ponsol Blue 3G | November 1922 | December 1922 |
| Lithosol Bordeaux B | July 1922 | July 1922 |

Note: In some instances plants under construction have not been completed or placed into operation. In other instances the experimental work is not complete on the products.

## PLAINTIFF'S EXHIBIT No. 663.

E. I. duPONT de NEMOURS & COMPANY.

SCHULTZ NUMBERS OF THE VAT DYES FOR WHICH LICENSES HAVE BEEN OBTAINED FROM THE CHEMICAL FOUNDATION.

| Chemical Foundation License No. | German Name | duPont Name | Schultz Number |
|---|---|---|---|
| | Indanthrene Blue GCD | Ponsol Blue G | 842* |
| | Indanthrene Yellow G | Ponsol Yellow G | 849* |
| | Indanthrene Dark Blue BO | Ponsol Dark Blue BR | 763 |
| | Indanthrene Green B | Ponsol Green B | 765 |
| | Indanthrene Violet R | Ponsol Violet R | 766 |
| | Indanthrene Violet RR | Ponsol Violet RR | 767 |
| | Hydron Blue R | Undetermined | 748 |
| | Hydron Blue G | Undetermined | 748 |
| | Indanthrene Blue 3G | Ponsol Blue 3G | 840 |
| | Indanthrene Golden Orange G | " Golden Orange G | 760 |
| | Indanthrene Golden Orange R | " Golden Orange RRT | 761 |
| | Indanthrene Bordeaux B Extra | " Claret B | 827 |
| | Indanthrene Red BN | " Red BN | 831 |
| | Indanthrene Violet RN | " Violet RN | 832 |

*The Patent included in this license covers a process for the production of beta-amino-anthraquinone, which is the intermediate for Ponsol Blue G and Ponsol Yellow G.

Note: The Schultz tables do not give numbers and constitutions for all of the vat dyes for which the duPont Company is licensed from the Chemical Foundation.

## PLAINTIFF'S EXHIBIT No. 664.

E. I. duPont de Nemours & Company.

PATENTS COVERING THE MANUFACTURE OF PHENYLGYCINE WHICH CAN BE USED AS AN INTERMEDIATE FOR INDIGO

U.S.P. 718,340, Jan. 13, 1903, Badische Company

Process for making omega cyan-methyl-aniline from aniline formaldehyde and bisulphite. Process patent.

This product is converted by saponification into phenylglycine, which process is not covered by a patent.

U.S.P. 778,656, Dec. 27, 1904, Badische Company

Preparation of omega cyan-methylaniline from anhydro-formaldehyde aniline with a solution of hydrocyanic acid in dilute alcohol. Process patent.

This product is converted by saponification into phenylglycine, which process is not covered by a patent.

U.S.P. 818,341, April 17, 1906, Badische Company

Process of making phenylglycine salt by reacting on chloracetic acid with an excess of aniline until the phenylglycine is converted into its anilide, separating this anilid and saponifying it with caustic alkali. Process patent.

U.S.P. 701,044, May 27, 1902, Farbwerke Hoechst

Process for making phenyl-amido-aceto-nitrile by action of glycollic acid nitrile (OH) $CH_2CN$ to act on aniline.

This product can be converted by saponification into phenylglycine, which process is not covered by a patent.

U.S.P. 841,456, Jan. 15, 1907, Farbwerke Hoechst

Process for making aromatic phenylglycines which consists in causting chloracetic acid to act on aromatic nitrohydrocarbons in the presence of iron, transforming the iron glycinate thus obtained into alkali glycinate by means of alkali, distilling off the excess of aromatic amine with steam and precipitating the glycine with dilute acids from the residue filtered from the iron oxide.

U.S.P. 868,294, Oct. 15, 1907, Farbwerke Hoechst

Process for making phenylglycine which consists

in causing primary aniline bases to interact with chloracetic acid in presence of ferrous hydrate and a saturated indifferent alkali salt solution.

U.S.P. 712,190, Oct. 28, 1902, Chemische Fabrik von Heyden

Process for manufacturing phenylglycine which consists in reacting upon one molecule of mono-chloracetic acid upon three or more molecules of aniline and separating the phenylglycine formed.

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## PLAINTIFF'S EXHIBIT No. 664-A.

E. I. duPont de Nemours & Company.

PATENTS COVERING THE MANUFACTURE OF PHENYLGLYCINE ORTHO-CARBOXYLIC ACID WHICH CAN BE USED AS AN INTERMEDIATE FOR INDIGO

U.S.P. 690,325, Dec. 31, 1901, Badische Company

Anthranilic acid is condensed with sodium chloracetate to form the acid salt of phenylglycocol ortho carboxylic acid having the formula

$C_7H_7N<^{COOH}_{COONa}$ Process and Product Patent.

U.S.P. 765,576, July 19, 1904, Badische Company

Process of making omega cyan-methyl-anthranilic acid from anthranilic acid, formaldehyde, sodium bisulphite and a metallic cyanide. Process patent.

This product is converted by saponification into the salt of phenylglycine ortho carboxylic acid which process is not covered by a patent.

U.S.P. 675,217, May 28, 1901, Farbwerke Hoechst

Process for manufacturing phenylglycine ortho carboxylic acid which consists in heating a mixture of ortho halogen benzoic acid and glycol. Process patent.

U.S.P. 662,754, Nov. 27, 1900, Farbwerk Mulheim

Process for making cyan methyl anthranilic acid from anthranilic acid formaldehyde and hydrocyanic acid.

This product is converted by saponification into the salt of phenylglycine ortho carboxylic acid. See U.S.P. 662,755.

U.S.P. 662,755, Nov. 27, 1900, Farbwerk Mulheim

Process for phenylglycocol ortho carboxylic acid which consists in treating anthranilic acid with hydrocyanic acid and formaldehyde and saponifying the resulting product.

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

MISCELLANEOUS PUBLICATION No. 22

# Regulations for the Control of Arsphenamine, Neoarsphenamine, and Sodium Arsphenamine

## in the District of Columbia and in Interstate Traffic

Supplementary to Regulations for the Sale of Viruses, Serums, Toxins, and Analogous Products, approved February 12, 1919 Miscellaneous Publication No. 10

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

## REGULATIONS FOR THE CONTROL OF THE MANUFACTURE AND SALE OF ARSPHENAMINE.

1. Arsphenamine shall not be sold in interstate traffic, or in the District of Columbia, or exported or imported, except as provided herein.

2. Arsphenamine shall be offered for sale only in colorless glass ampules containing an atmosphere of an inert gas, or in a vacuum.

3. Each ampule shall be plainly marked so as to show the license number, the lot number, the name of the preparation, the actual amount of arsphenamine in the container, and the name and address of the manufacturer, in the following manner:

License No. ---------- Lot No. ----------

This package contains ---------- grams of arsphenamine (hydrochloride of 3-diamino-4-dihydroxy-1-arsenobenzene) and conforms with regulations and tests prescribed by the United States Public Health Service. Made by ----------

The name arsphenamine shall be given precedence on the labels of containers and packages over the particular brand or trade name, and the size of type and display used for the name arsphenamine shall be at least as conspicuous as that used for the brand or trade name.

4. Each lot of the finished product shall be tested by the manufacturer for arsenic content and toxicity.

(1) The total arsenic content of the drug as obtained from the ampule shall not be below 30 per cent nor above 32 per cent, when determined according to Lehmann's method as described in Public Health Reports, volume 33, June 21, 1918, page 1012.

(2) The maximum tolerated dose shall not be less than 100 milligrams per kilo body weight for albino rats when tested as follows:

(*a*) Animals must be well nourished and free from disease, weighing from 100 to 150 gm. Pregnant animals shall not be used.

(*b*) *Feeding and care of animals.*—The rats should be fed both before and during the period of observation on a ration consisting of white bread, cracked corn, oats, cow's milk, and, in addition, twice weekly, fresh beef and cabbage. An adequate supply of fresh, clean water should be provided at all times. The rats should have no access to food for from 18 to 12 hours preceding the injection, though water should be supplied during this time.

(*c*) *Preparation of solution.*—The drug shall be dissolved in freshly glass-distilled water and made into the alkaline solution by the addition of 0.9 cc. N/1 sodium hydrate for each 0.1 gm. of the drug. The final concentration of the drug shall be in the proportion of 2 parts to 100. The drug shall be completely soluble in water in this proportion.

(*d*) *Method of injection.*—This should be made into the saphenous vein by means of a burette or a syringe, accurately graduated to 0.01 cc. When hemorrhage occurs it should be controlled mechanically.

(*e*) *Rate of injection.*—This shall be at from 12 to 15 seconds for each 0.1 cc. of the solution.

(*f*) An anesthetic is not required.

(*g*) For each toxicity test a series of not less than five rats shall be used, and at least 60 per cent of the animals injected must survive at least 48 hours from the time of the injection, provided that if the first test is made on five rats only and more than one die the test must be repeated and the final result based on the total number of rats injected.

5. In addition to tests made by the manufacturer before the drug is put in ampules, final tests of the product as prepared for the market shall be made on each lot by the United States Public Health Service before its release. For this purpose samples of each lot shall be forwarded by the manufacturer to the Hygienic Laboratory of the United States Public Health Service. The number of samples supplied shall not be less than 10 ampules from any lot, and from lots of over 1,000 ampules 1 per cent shall be furnished. Each ampule forwarded shall contain at least 0.6 gm. arsphenamine. Accompanying each lot, the manufacturer shall send a copy of the report of the toxicity test and arsenic determination on which it was passed.

6. Officers of the United States Public Health Service, when duly detailed, may enter establishments for the purpose of securing samples and conducting inspections.

7. When lots have satisfactorily passed the prescribed tests, they may be offered for sale; but the right is reserved to require the withdrawal from the market of any lot designated by the Surgeon General of the United States Public Health Service.

8. Manufacturers shall retain 2 per cent of the product from each lot for a period of three months from the time the preparation is placed on the market, provided that in no case this is less than 10 ampules of at least 0.6 gm. each.

## REGULATIONS FOR THE CONTROL OF THE MANUFACTURE AND SALE OF NEOARSPHENAMINE.

1. Neoarsphenamine shall not be sold in interstate traffic, or in the District of Columbia, or exported or imported except as provided herein.

2. Neoarsphenamine shall be offered for sale only in colorless glass ampules containing an atmosphere of an inert gas, or in a vacuum.

3. Each ampule shall be plainly marked so as to show the license number, the lot number, the name of the preparation, the actual amount of neoarsphenamine in the container, and the name and address of the manufacturer in the following manner:

License No. ..... Lot No. .....

This package contains ..... grams of neoarsphenamine (a compound prepared from arsphenamine by means of formaldehyd-sulphoxylate) and conforms with the regulations and tests prescribed by the United States Public Health Service. Made by .....

The name neoarsphenamine shall be given precedence on the labels of containers and packages over the particular brand or trade name, and the size of type and the display used for the name neoarsphenamine shall be at least as conspicuous as that used for the brand or trade name.

4. Each lot of the finished product shall be tested by the manufacturer for arsenic content and toxicity.

(1) The total arsenic content of the drug as obtained from the ampule shall not be below 18 nor above 20 per cent when determined according to Lehmann's method as described in Public Health Reports, volume 33, June 21, 1918, page 1012. The drug should be freely mobile in ampule and soluble in cold water (1 gm. in 10 c. c. of water in 5 minutes).

(2) The maximum tolerated dose shall not be less than 200 milligrams per kilo body weight for albino rats, when tested as follows:

(*a*) Animals must be well nourished and free from disease, weighing from 100 to 150 gm. Pregnant animals shall not be used.

(*b*) The rats should be fed both before and during the period of observation on a ration consisting of white bread, cracked corn, oats, cow's milk, and, in addition, twice weekly, fresh beef and cabbage. An adequate supply of fresh, clean water should be provided at all times. The rats should have no access to food for from 18 to 12 hours preceding the injection, though water should be supplied during this time.

(c) *Preparation of solution.*—The drug shall be dissolved in cold glass-distilled water. A preparation which is not readily soluble in cold distilled water should be discarded at once as a dangerous product. The final concentration of the solution shall be in the proportion of 4 parts per 100.

(d) *Method of injection.*—This should be made into the saphenous vein by means of a burette or a syringe, accurately graduated to 0.01 cc. When hemorrhage occurs it should be controlled mechanically.

(e) *Rate of injection.*—This shall be at from 12 to 15 seconds for each 0.1 cc. of the solution.

(f) An anesthetic is not required.

(g) For each toxicity test a series of not less than five rats shall be used, and at least 60 per cent of the animals injected must survive at least seven days from the time of the injection, provided that if the first test is made on five rats only and more than one die the test must be repeated and the final result based on the total number of rats injected.

5. In addition to tests made by the manufacturer before the drug is put in ampules, final tests of the product as prepared for the market shall be made on each lot by the United States Public Health Service before its release. For this purpose samples of each lot shall be forwarded by the manufacturer to the Hygienic Laboratory of the United States Public Health Service. The number of samples supplied shall not be less than 10 ampules from any lot, and from lots of over 1,000 ampules 1 per cent shall be furnished. Each ampule forwarded shall contain at least 0.9 gm. neoarsphenamine. Accompanying each lot, the manufacturer shall send a copy of the report of the toxicity test and arsenic determination on which it was passed.

6. Officers of the Public Health Service, when duly detailed, may enter establishments for the purpose of securing samples and conducting inspections.

7. When lots have satisfactorily passed the prescribed tests, they may be offered for sale; but the right is reserved to require the withdrawal from the market of any lot designated by the Surgeon General of the United States Public Health Service.

8. Manufacturers shall retain 2 per cent of the product from each lot for a period of three months from the time the preparation is placed on the market, provided that in no case this is less than 10 ampules of 0.9 gm. each.

## REGULATIONS FOR THE CONTROL OF THE MANUFACTURE AND SALE OF SODIUM ARSPHENAMINE.

1. Sodium arsphenamine shall not be sold in interstate traffic, or in the District of Columbia, or exported or imported, except as provided herein.

2. Sodium arsphenamine shall be offered for sale only in colorless glass ampules containing an atmosphere of inert gas, or in a vacuum.

3. Each ampule shall be plainly marked so as to show the license number, the lot number, the name of the preparation, the actual amount of sodium arsphenamine in the container, and the name and address of the manufacturer, in the following manner:

License No. ..... Lot No. .....

This package contains ..... grams of sodium arsphenamine (a compound prepared from arsphenamine by treating with sodium hydroxide) which conforms with the regulations and tests prescribed by the United States Public Health Service. Made by .....

The name "Sodium arsphenamine" shall be given precedence on the labels of containers and packages over the particular brand or trade name, and the size of type and display used for the name "Sodium arsphenamine" shall be at least as conspicuous as that used for the brand or trade name.

4. Each lot of the finished product shall be tested by the manufacturer for arsenic content and toxicity.

(1) The total arsenic content of the drug as obtained from the ampule shall be 20 per cent, plus or minus 1 per cent (20 ± 1 per cent) i. e., the percentage of arsenic shall be between 19 and 21 per cent, preferably as near 20 per cent as possible, when determined according to Lehmann's method as described in Public Health Reports vol. 33, June 21, 1918, page 1012.

(2) The maximum tolerated dose shall be not less than 180 mgm. per kilo bodyweight for the albino rat when tested as follows:

(*a*) Animals must be healthy and weigh from 100 to 150 grams. Pregnant animals shall not be used.

(*b*) *Feeding and care of animals.*—The rats shall be fed both before and during the period of observation on a ration consisting of white bread, cracked corn, cow's milk, and, in addition, twice weekly, fresh beef and cabbage. An adequate supply of fresh, clean water shall be provided at all times. The rats shall have no access to food for from 18 to 12 hours preceding the injection, though water should be supplied during this time.

(*c*) The drug must be readily and completely soluble at room temperature in freshly glass-distilled water, in which it shall be dissolved for toxicity testing. The concentration of the drug shall be in the proportion of 4 parts in 100.

(*d*) *Method of injection.*—This should be made into the saphenous vein by means of a burette or syringe, accurately graduated to 0.01 c. c. When hemorrhage occurs it should be controlled mechanically.

(*e*) *Rate of injection.*—This shall be at from 12 to 15 seconds for each 0.1 c. c. of the solution.

(*f*) An anaesthetic is not required.

(*g*) For each toxicity test a series of not less than five rats shall be used, and at least 60 per cent of the animals injected must survive at least 48 hours from the time of the injection, provided that if the first test is made on five rats only and more than one die the test must be repeated and the final result based on the total number of rats injected.

5. In addition to tests made by the manufacturer final tests of the product as prepared for the market shall be made on each lot by the United States Public Health Service before its release. For this purpose samples of each lot shall be forwarded by the manufacturer to the Hygienic Laboratory of the United States Public Health Service. The number of samples supplied shall not be less than 10 ampules from any lot, and from lots of over 1,000 ampules 1 per cent shall be furnished. Each ampule forwarded shall contain at least 0.6 gm. of sodium arsphenamine. Accompanying each lot, the manufacturer shall send a copy of the report of the toxicity test and arsenic determination on which it was passed.

6. Officers of the Public Health Service, when duly detailed, may enter establishments for the purpose of securing samples and conducting inspections.

7. When lots have satisfactorily passed the prescribed tests they may be offered for sale, but the right is reserved to require the withdrawal from the market of any lot designated by the Surgeon General of the United States Public Health Service.

8. Manufacturers shall retain 2 per cent of the product from each lot for a period of three months from the time the preparation is placed on the market, provided that the quantity so retained is in no case less than 10 ampules of at least 0.6 gm. each.

AN ACT To regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That from and after six months after the promulgation of the regulations authorized by section four of this act no person shall sell, barter, or exchange, or offer for sale, barter, or exchange in the District of Columbia, or send, carry, or bring for sale, barter, or exchange from any State, Territory, or the District of Columbia into any State, Territory, or the District of Columbia, or from any foreign country into the United States, or from the United States into any foreign country, any virus, therapeutic serum, toxin, antitoxin, or analogous product applicable to the prevention and cure of diseases of man, unless (a) such virus, serum, toxin, antitoxin, or product has been propagated and prepared at an establishment holding an unsuspended and unrevoked license, issued by the Secretary of the Treasury as hereinafter authorized, to propagate and prepare such virus, serum, toxin, antitoxin, or product for sale in the District of Columbia, or for sending, bringing, or carrying from place to place aforesaid; nor (b) unless each package of such virus, serum, toxin, antitoxin, or product is plainly marked with the proper name of the article contained therein, the name, address, and license number of the manufacturer, and the date beyond which the contents can not be expected beyond reasonable doubt to yield their specific results: *Provided*, That the suspension or revocation of any license shall not prevent the sale, barter, or exchange of any virus, serum, toxin, antitoxin, or product aforesaid which has been sold and delivered by the licentiate prior to such suspension or revocation, unless the owner or custodian of such virus, serum, toxin, antitoxin, or product aforesaid has been notified by the Secretary of the Treasury not to sell, barter, or exchange the same.

SEC. 2. That no person shall falsely label or mark any package or container of any virus, serum, toxin, antitoxin, or product aforesaid; nor alter any label or mark on any package or container of any virus, serum, toxin, antitoxin, or product aforesaid so as to falsify such label or mark.

SEC. 3. That any officer, agent, or employee of the Treasury Department, duly detailed by the Secretary of the Treasury for that purpose, may, during all reasonable hours, enter and inspect any establishment for the propagation and preparation of any virus, serum, toxin, antitoxin, or product aforesaid for sale, barter, or exchange in the District of Columbia, or to be sent, carried, or brought from any State, Territory, or the District of Columbia into any other State or Territory or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States.

SEC. 4. That the Surgeon General of the Army, the Surgeon General of the Navy, and the supervising Surgeon General of the Marine Hospital Service be, and they are hereby, constituted a board with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time such rules as may be necessary in the judgment of said board to govern the issue, suspension, and revocation of licenses for the maintenance of establishments for the

propagation and preparation of viruses, serums, toxins, antitoxins, and analogous products, applicable to the prevention and cure of diseases of man, intended for sale in the District of Columbia, or to be sent, carried, or brought for sale from any State, Territory, or the District of Columbia, into any other State, Territory, or the District of Columbia, or from the United States into any foreign country, or from any foreign country into the United States: *Provided*, That all licenses issued for the maintenance of establishments for the propagation and preparation in any foreign country of any virus, serum, toxin, antitoxin, or product aforesaid, for sale, barter, or exchange in the United States, shall be issued upon condition that the licentiates will permit the inspection of the establishments where said articles are propagated and prepared, in accordance with section three of this act.

SEC. 5. That the Secretary of the Treasury be, and he is hereby, authorized and directed to enforce the provisions of this act and of such rules and regulations as may be made by authority thereof; to issue, suspend, and revoke licenses for the maintenance of establishments aforesaid, and to detail for the discharge of such duties such officers, agents, and employees of the Treasury Department as may in his judgment be necessary.

SEC. 6. That no person shall interfere with any officer, agent, or employee of the Treasury Department in the performance of any duty imposed upon him by this act or by regulations made by authority thereof.

SEC. 7. That any person who shall violate or aid or abet in violating any of the provisions of this act shall be punished by a fine not exceeding five hundred dollars or by imprisonment not exceeding one year, or by both such fine and imprisonment, in the discretion of the court.

SEC. 8. That all acts and parts of acts inconsistent with the provisions of this act be, and the same are hereby, repealed.

Approved July 1, 1902.

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PLAINTIFF'S EXHIBIT No. 666.

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE
HUGH S. CUMMING, SURGEON GENERAL

# PREPARATION AND ADMINISTRATION OF ARSPHENAMINE AND NEOARSPHENAMINE

STANDARD INSTRUCTIONS FOR THE PREPARATION AND INTRAVENOUS ADMINISTRATION OF ARSPHENAMINE AND NEOARSPHENAMINE FOR USE BY THE MEDICAL DEPARTMENTS OF THE ARMY, OF THE NAVY, AND OF THE VETERANS' BUREAU, AND BY THE PUBLIC HEALTH SERVICE

[Issued July 1, 1922; superseding all previous instructions]

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FROM THE
PUBLIC HEALTH REPORTS
AUGUST 4, 1922
(Pages 1857-1882)



WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

# PREPARATION AND ADMINISTRATION OF ARSPHENAMINE AND NEOARSPHENAMINE.[1]

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[Issued July 1, 1922, superseding all previous instructions.]

## Reasons for Issuing Instructions.

Reactions following the use of arsphenamine and neoarsphenamine are still occurring in the Government services, although experience has shown that these reactions can be reduced to a minimum by the use of proper methods of procedure. Practically all serious reactions which have occurred in the Government services during the last five years have been specially investigated, and in nearly every instance it has been shown that the reactions were due (1) to some error in the technique of the preparation and administration of the drug or (2) to faulty examination of the patient, especially in relation to the effects of previous injections. In no case has it been possible to prove that the reactions have been due primarily to inherent toxicity of the drug itself. It therefore seems desirable to issue a complete set of instructions on technique.

Instructions are issued by each manufacturer, and they vary in some details with each product. In general, these instructions are satisfactory for the particular brand concerned; but as the same standard of relative nontoxicity is required by the Government for all brands, it is not considered desirable in these instructions to individualize the products.

The following instructions may seem unnecessarily explicit, and the technique outlined may differ from others which give satisfactory results. However, every essential statement contained herein is based on the results of the study mentioned above. The procedures given are designed to make the treatment safe and at the same time not to make the technique unnecessarily exacting or cumbersome for the clinician.

Medical officers are directed to follow these instructions and are cautioned that they will be held responsible for the untoward results following the use of procedures which are essentially different.

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[1] Reprint from the Public Health Reports, vol. 37, No. 31, Aug. 4, 1922, pp. 1867-1882.

Any of the specified apparatus which is not on hand will be furnished upon request through regular channels.

### Choice of Drug.

Although neoarsphenamine is more popular than arsphenamine, on account of ease of preparation and administration, which constitutes a real advantage under some circumstances, attention is called to the fact that neoarsphenamine is a much less constant and less reliable preparation than arsphenamine.

Not only do certain batches of all brands of neoarsphenamine show a tendency to deteriorate with age but there is also a pronounced irregularity in the therapeutic activity of different batches of neoarsphenamine, regardless of the age and source of the preparations. As a result of these variations, the physician may obtain a much less satisfactory therapeutic result than when arsphenamine is used. Arsphenamine, regardless of age, brand, or lot number, shows a more uniform therapeutic activity. It is probably, also, inherently more potent. Arsphenamine should, therefore, be used whenever practicable, and neoarsphenamine should be reserved for situations in which it is difficult to give arsphenamine.

Other members of the arsphenamine series are considered to be still in the experimental stage and not for routine use.

In regard to different brands, any product which has passed the requirements of the United States Public Health Service may be used. The labels of duly licensed products bear imprint to this effect and the license number.

### Arsphenamine.

#### I. LICENSED PRODUCTS.

The following firms have been licensed by the Treasury Department to manufacture or to import arsphenamine:

#### A. LICENSED TO MANUFACTURE.

| Name of firm and address. | Name of trade product. |
|---|---|
| Dermatological Research Institute, 1720 Lombard Street, Philadelphia, Pa. | Arsenobenzol. |
| Diarsenol Company (Inc.), Buffalo, N. Y. | Diarsenol. |
| Mallinckrodt Chemical Works, St. Louis, Mo. | Arsphenamine. |
| H. A. Metz Laboratories (Inc.), 122 Hudson Street. | Salvarsan. |
| Powers-Weightman-Rosengarten Co., Philadelphia, Pa. | Arsenobenzol Billon. |
| E. R. Squibb & Sons, New Brunswick, N. J. | Arsphenamine. |

#### B. LICENSED TO IMPORT.

| Name of firm and address. | Name of trade product. |
|---|---|
| Farbwerke, vorm. Meister Lucius und Brüning, Hoechst-am-Main, Germany. | Salvarsan. |
| Poulenc Frères, 92 Rue Vieille-du-Temple, Paris, III, France. | Arsenobenzol Billon. |

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II. METHOD OF INJECTION.

Only the gravity method should be employed in administering arsphenamine.

III. MATERIALS REQUIRED.

A. Erlenmeyer flasks, 500 to 1,000 c. c. capacity.
B. Funnels, glass, 4-inch.
C. Cylinders, graduated, 500 to 1,000 c. c. capacity.
D. Gravity apparatus, consisting of—

1. Gravity graduated glass cylinders, 300 c. c. capacity; long graduations at the 100 c. c. marks; medium long graduations every 25 c. c.; short graduations for each 5 c. c.; the zero point to be at the top and the 300 mark to be at the bottom of the cylinder.

2. Rubber tubing, pure gum, heavy wall, inside diameter, 5/32-inch (about 4 mm.), of lengths to limit height of the cylinder to 3 feet above the patient's arm.

*Caution*: Before being used the first time the tubing should be filled with normal sodium hydroxide solution for not less than six hours. It should then be thoroughly rinsed in water, sterilized by boiling, and then thoroughly rinsed with sterile water again just before using.

3. Needles with slip joint, 19 standard gauge, medium bevel, length of cannula 1½ inches. While not necessary, the Fordyce type of needle is a great convenience. The correct gauge is highly important, as it influences the rate of flow. Proper care of the needles is important. They should be cleansed immediately after use, and precautions taken to prevent rust. Just before sterilization, the point should be freshened on a stone, if necessary. A dull needle tends to make a dissatisfied patient.

4. Glass tubing, 6 mm. in diameter, for windows, which should be inserted in the rubber tubing so as to be a few inches from the lower end.

5. Adapters for attaching needles to end of tubing. These may be of metal or glass. If of glass they will serve as extra windows as well as adapters.

6. Pinch cocks (Mohr's) for cutting off the flow, to be applied a short distance above the needle.

E. Sterile gauze, cut in small squares, for filtering the solution.

F. Sterile freshly distilled water. This water should be distilled in glass or block tin and should be sterilized immediately by autoclaving or boiling in Erlenmeyer flasks. These flasks should be stoppered with a gauze-wrapped cotton plug and capped with paper or tin foil. Preparation of the water preferably should be carried

out on the day before use, so that it will be both fresh and cool at the time needed.

G. Sterile salt solution. This should be made with water prepared as above and chemically pure sodium chloride. Sterilization should be carried out as given above. The strength of the salt solution should be the usual 0.85 per cent. The use of salt solution in the place of distilled water for the dilution is considered a refinement which is not necessary in routine work, but it may have some advantages, since a solution of arsphenamine in distilled water is not isotonic.

H. Normal sodium hydroxide volumetric solution, U. S. P. IX, p. 573. Enough of this can be prepared at one time to last for a month or longer, provided it is kept in a rubber stoppered wax- or paraffin-lined bottle. There is danger of deterioration on account of absorption of $CO_2$ from the air and of reactions with the glass container. A wax-lined bottle can be prepared by placing wax or paraffin in a bottle, sterilizing with dry heat, and spreading the melted wax by rotation over the inside of the bottle as it is cooling. If precipitate is found in the alkali, it is probably an evidence of deterioration of the solution, which should be discarded. For use in large clinics, a 2-liter bottle, protected from the action of the alkali and of the atmospheric $CO_2$ and set up with an automatic measuring burette, is a great convenience and will insure the safe-keeping of the alkali for a long period.

I. Burette or pipette. A graduated burette or pipette for accurately measuring the alkali.

All the glassware mentioned above should be of chemical standard. All apparatus should be surgically clean, freshly sterilized, and cool at time of using. The apparatus should be sterilized by dry heat or autoclave, with the exception of the tubing and the needles, which should be boiled.

If the medical officer has any doubt about being able to obtain pure normal sodium hydroxide solution, the same will be supplied on request to the Army Medical School, the Naval Medical School, or to the Hygienic Laboratory, Washington, D. C.

### IV. INSPECTION OF DRUG.

A. Note and record manufacturer, lot number, and particularly the dosage stated on the label. In this connection it is a great convenience, and more economical, to employ dosages which are just sufficient to make up the unit batch of solution desired; e. g., if 10 doses of 0.4 gram are made up at a time, use ampules containing 4 grams. An ampule containing 10 doses is the largest that should be used.

B. Examine ampules critically and do not use any which are cracked or in which the powder is not freely mobile and is not of a pale yellow to a lemon-yellow in color. Forward any suspected ampules with explanatory letter directly to the Hygienic Laboratory, Washington, D. C., for examination.

C. The ampules, having satisfactorily passed preliminary inspection, should be immersed in 95 per cent alcohol, primarily to detect any minute cracks in the glass not visible on preliminary inspection and also to cleanse the ampule. Lay ampules on sterile towel to dry or wipe off alcohol with sterile gauze.

### V. PREPARATION OF SOLUTIONS.

A. The amount to be prepared at one time will depend on the number of patients, but unit batches of more than 10 average doses should not be prepared.

B. Place in Erlenmeyer flasks about 10 c. c. of freshly distilled sterile water for each decigram of arsphenamine to be used; e. g., 100 c. c. for 1 gram. Open ampule and sprinkle—do not dump—contents on surface of water. The temperature of the water is of great importance. For all brands of arsphenamine, except for arsenobenzol manufactured by the Dermatological Research Institute, the water should be at room temperature and, as a rule, the drug should go into solution, with little or no agitation, within a few minutes. A slight amount of shaking is permissible with any product, but shaking should always be kept at a minimum.

*Exception:* The arsphenamine manufactured by the Dermatological Research Institute requires either hot water alone, or it can be dissolved in cold water if the powder is first thoroughly moistened with ethyl alcohol (about 1 c. c. to 0.6 gram). This amount of alcohol is harmless. In either case it is essential, immediately after contact with the water, to shake the powder vigorously for a few seconds in order to prevent the formation of gummy masses. After this shaking it should stand until completely dissolved and until the solution is cool.

When the arsphenamine has completely dissolved, forming a perfectly clear solution with an absence of any gelatinous particles when viewed by transmitted light, it is ready for alkalinization. If for any reason the arsphenamine fails to form a perfect solution, it must be discarded.

C. Correct alkalinization is extremely important; failure to alkalinize properly causes more reactions than any other error connected with the use of arsphenamine.

1. The exact method consists in the addition all at once of 0.85 c. c. normal sodium hydroxide solution for each 0.1 gm. of arsphenamine used; e. g., 8.5 c. c. for 1 gm. of drug. This is the correct amount necessary to form the disodium salt of arsphenamine (see V, p. 1873), the form which is best tolerated by the patient.

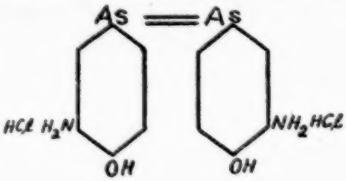
2. Approximate method of alkalinization. An exception to the rule that only standardized normal alkali should be used may be made in case this is not obtainable. Under such circumstances, the exact concentration of alkali being unknown, the operator should keep in mind the following facts: Arsphenamine as it appears on the market is the dihydrochloride of the arsphenamine base (see I, p. 1873), which is soluble in water; but the solution is strongly acid and highly toxic. Upon the gradual addition of sodium hydroxide a precipitate at once begins to form and then redissolves. This property of the drug, not understood by some physicians, has caused them to mistake the end point. This mistake is especially likely to occur when the operator thinks he is using a 15 per cent solution, when in reality the solution is only 4 or 5 per cent. The drug when injected in this still strongly acid state, the monohydrochloride (see II, p. 1873), produces serious reactions.

When a little over one-fourth of the amount of alkali indicated under (1) has been added, the precipitate no longer redissolves. From this point on, until there has been added almost three-fourths of the amount of alkali necessary to form the disodium salt, the precipitate remains and does not redissolve on shaking (see III, p. 1873). But when three-fourths of the total amount necessary has been added, the precipitate redissolves (see IV, p. 1873).

It is at this point, when just enough alkali has been added to dissolve the precipitate, that the solution has very frequently been injected. *This solution of the monosodium salt is the most frequent cause of reactions.* At this point 75 per cent of the correct amount of sodium hydroxide solution has been added, and hence an additional one-third of the total amount of alkali used up to this point should now be added (see V, p. 1873). This last addition is the remaining 25 per cent of the correct amount corresponding to a total of 0.85 c. c. per 0.1 gm. of standardized $\frac{N}{1}$ NaOH solution as mentioned under (1) above; e. g., if 3.3 c. c. of an unknown solution were required for completely clearing a

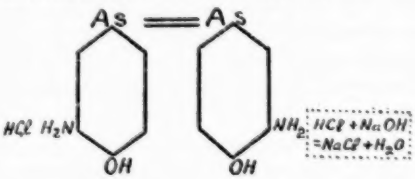
**The Chemical Transformation of Arsphenamine into its Disodium Salt for Intravenous Administration by the Addition of Sodium Hydroxide.**

I. ARSPHENAMINE DIHYDROCHLORIDE



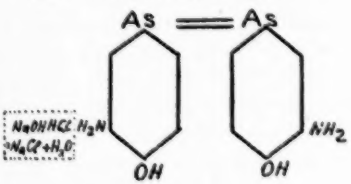

I. Arsphenamine (dihydrochloride). This is the drug as it appears on the market. It is soluble in distilled water, strongly acid to litmus, highly toxic, and must not be injected.

II. ARSPHENAMINE MONOHYDROCHLORIDE



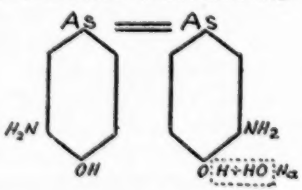

II. Arsphenamine monohydrochloride is formed when one-fourth the amount of sodium hydroxide necessary to form the disodium salt has been added, or 0.85 c. c. of normal sodium hydroxide per 0.4 gram of arsphenamine. It remains in solution, is still strongly acid to litmus, is highly toxic, and must not be injected.

III. ARSPHENAMINE BASE



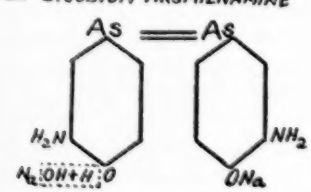

III. The base is formed when one-half the amount of sodium hydroxide necessary to form the disodium salt has been added, or 1.70 c. c. of normal sodium hydroxide for 0.4 gram of arsphenamine. A heavy insoluble precipitate is formed. This suspension must not be injected.

IV. MONOSODIUM ARSPHENAMINE




IV. The monosodium salt of arsphenamine is formed when three-fourths the amount of sodium hydroxide necessary to form the disodium salt has been added, or 2.55 c. c. of normal sodium hydroxide per 0.4 gram of arsphenamine. It is just soluble in water, and forms an unstable, slightly alkaline solution, which must not be injected.

V. DISODIUM ARSPHENAMINE




V. The disodium salt of arsphenamine is formed when the final fourth of the full amount of normal sodium hydroxide necessary has been added, or 3.4 c. c. of normal sodium hydroxide for 0.4 gram of arsphenamine. This amount is one-third more than the amount used for the monosodium salt IV. This form is a stable alkaline solution. It is the only form in which the drug should be injected.

solution containing 2 gms. of arsphenamine, 1.1 c. c. more should be added. With a thorough understanding of the above, the operator may roughly standardize his alkali against the arsphenamine. No two brands of arsphenamine vary greatly in the amount of alkali required, whereas various alkali solutions vary in strength by several hundred per cent.

The $P_h$ of a proper solution is about 10, and it is impossible to buffer it to neutrality by common buffers without precipitation. Moreover, the alkaline solution is well tolerated if given slowly and well diluted.

3. *"Haphazard method"* of alkalinization, or *drop method.* This is mentioned only to condemn it. It is inconceivable that the operator will be unable to secure some sort of a graduated measuring device in order to measure the alkali instead of guessing at the amount. Numerous reactions from underalkalinization have occurred with this method, particularly where several doses of the drug are prepared at one time. The alkali has been added with a dropper until clearing occurred, and then a few additional drops have been added regardless of whether the solution contained 1 or 10 doses. Less frequently overalkalinization has also occurred. The injection of an overalkalinized solution causes pain along the vein, and thrombosis.

D. *Filtration and dilution to proper strength* of the alkalinized solution.—With sterile forceps place 4 layers of sterile gauze in the funnel. Wash with sterile water. Pour alkalinized solution of arsphenamine through this gauze into a graduated cylinder and then rinse the filter with enough sterile distilled water to bring the total for each decigram of drug up to 25 c. c.; e. g., for 1 gram of arsphenamine 250 c. c. of solution should be made. This washing of the drug through the filter with the water insures full dosage. If a saline solution is desired, it is used at this point in place of the distilled water, at usual strength, 0.85 per cent.

E. *Time the solution should be allowed to stand.*—The *properly alkalinized, filtered,* and *diluted* solution should now stand for at least 30 minutes before being injected, to allow completion of the chemical reactions. The toxicity is considerably reduced by this delay. The solution may stand as long as three hours without undergoing any increase in toxicity, provided it is protected from the air, not shaken, and provided the temperature does not exceed 30° C. The solution is now ready for administration.

F. *Temperature.*—Thirty degrees C. is the correct temperature at which the drug should be introduced; in no case should it be warmed above this point.

G. *Dosage.*—As a rule the initial dose should be small. The average dose used is about 0.4 gram for 150 pounds body weight, but no

hard and fast rule can be laid down; each case should be considered individually by the clinician. When a radical cure is being sought and the patient tolerates the injections well, full doses should be given.

VI. ADMINISTRATION.

A. Emphasis should be laid on the complete physical examination preliminary to administering arsenical treatment, for evidence of renal, cardiovascular, or visceral changes, in the presence of which it should be used cautiously. Weekly urinalyses should be made during treatment. The patient should be questioned concerning any reactions following the last treatment, with special reference to any toxic skin eruptions as danger signals against further treatment. Any evidence of an exfoliative dermatitis is an *absolute contraindication* against any further treatment with any arsenical. Evidence of jaundice should also be looked for and, if present, is an indication for caution. In late cases the possibility of a Herxheimer reaction following a large injection should be remembered. This may be fatal should vital structures be involved. *Each patient should receive individual consideration.*

B. *Preparation of patient.*—The patient should be given a mild cathartic the night before and should eat no food within two or three hours before the injection. Only a light meal should be taken a few hours following the injection. Ambulatory patients should rest for a short time after the injection. If large doses are being given, the patient preferably should be kept in bed until the following morning.

C. The patient should be placed in a recumbent position.

D. The gravity apparatus should be arranged to provide a column of solution not over 3 feet in height. The tubing should be rinsed with sterile water; then the cylinder and tubing should be filled with the solution and the air expelled by lowering the end of the tube below the level of the fluid in the cylinder. Apply pinch cock.

E. Select a suitable vein in either arm and sterilize the overlying skin by applying tincture of iodine, which should preferably be removed after a minute or two with 95 per cent alcohol.

F. Apply rubber turniquet.

G. Insert needle, bevel up, in two stages (first through the skin, second into the vein), and allow a few drops of blood to escape to indicate entrance to the vein. The needle should be slid well into the vein in order to avoid escape of the point from the vein on further slight manipulations. Now connect adapter attached to gravity apparatus. Open pinch cock and snap it over the window.

H. *Rate of injection.*—If the specifications as to the gauge of needle, etc., have been followed, the correct rate of injection is practically

insured, i. e., by the size of the needle and the length of the tube; however this should not be taken for granted, but the exact time should be observed, and in no case should the rate exceed 25 c. c. in one minute or 0.4 gram dose in four minutes; five minutes is preferable. A graduated sand glass which runs for five minutes is a convenient timer. The rate of flow should be even as well as slow. Should patient show any signs of reaction, stop. It is highly desirable, in sensitive patients, to wait a minute or two after injection of first 0.1 gram before proceeding with rest of injection. When the necessary amount has been injected, cut off flow with pinch cock, disconnect tubing, allow a few drops of blood to escape, and then withdraw needle and place sterile gauze over the puncture, instructing the patient to hold it there for a few minutes. If another injection is to be given and there is any suspicion of contamination of the tubing with blood, empty cylinder and start over with a new sterile tube.

### VII. REACTIONS.

Following the above methods, reactions should be rare. If a serious reaction does occur, a complete account should be forwarded to the Surgeon General, including clinical history, dose injected, lot number, and manufacturer of the drug. Samples should also be sent of the same lot of drug; also samples of the sodium hydroxide, distilled water, and saline used for purposes of investigation.

The prevention and treatment of reactions is very important. A discussion of this subject is not undertaken here, except to call attention to general hygiene, diet, foci of infection, dosage, etc., as well as care in preparation and administration of the drug in prophylaxis of these reactions. Patients that continually show immediate reactions should receive prior administration of atropine or divided doses of arsphenamine or combinations of both. In the clinical control of the immediate or nitritoid types of reactions, the chief preparation of value is epinephrin $\frac{1}{1000}$, about 1 c.c. intramuscularly. This is also of value in the very severe type of reaction—hemorrhagic encephalitis. In the severe types of skin reactions, as exfoliative dermatitis, rapid alkalinization of the patient is indicated. In all these delayed types of arsenical poisoning excellent results are said to be derived from the use of sodium thiosulphite given by mouth or intravenously.

## Neoarsphenamine.

### I. LICENSED PRODUCTS.

The following firms have been licensed by the Treasury Department to manufacture or import neoarsphenamine:

#### A. LICENSED TO MANUFACTURE.

| Name of firm and address. | Trade name of product. |
|---|---|
| Dermatological Research Institute, 1720 Lombard Street, Philadelphia, Pa. | Neoarsphenamine. |
| Diarsenol Co. (Inc.), Buffalo, N. Y. | Neodiarsenol. |
| H. A. Metz Laboratories (Inc.), 122 Hudson Street, New York City | Neosalvarsan. |
| Powers-Weightman-Rosengarten Co., Philadelphia, Pa. | Novarsenobenzol Billon. |
| E. R. Squibb & Sons, New Brunswick, N. J. | Neoarsphenamine |

#### B. LICENSED TO IMPORT.

| | |
|---|---|
| Farbwerke, vorm. Meister Lucius und Brüning, Hoechst-am-Main, Germany | Neosalvarsan. |
| Poulenc Frères, 92 Rue Vieille-du-Temple, Paris, III, France | Novarsenobenzol. |

### II. METHOD OF INJECTION.

The use of the gravity method is strongly recommended, especially in clinics where a considerable number of doses are to be given. It was demonstrated in one clinic that the average time required to give 100 injections was reduced, without changing the personnel, when the gravity method was substituted for the syringe method, and a high percentage of reactions, due directly or indirectly to the syringe method, also ceased to occur. With the gravity apparatus arranged to deliver a dose in about four minutes, one operator was able to run two tables much more easily than one table with the syringe method.

It is recognized, however, that there are circumstances in which the syringe method is indicated, as in the field, where apparatus must be reduced to a minimum. Under these circumstances the use of neoarsphenamine by the syringe method is a valuable therapeutic measure. It fills a need, but technically is inferior to the gravity method; and, therapeutically, neoarsphenamine given by either method is inferior to arsphenamine given by the gravity method.

### III. APPARATUS REQUIRED.

A. When the gravity method is to be used:

1. Gravity apparatus (see Arsphenamine, III–D).
2. Erlenmeyer flasks, 50–300 c.c.
3. Funnels, glass, 2-inch.
4. Sterile gauze.

5. Graduated glass cylinders, 100 to 500 c. c.
6. Sterile distilled water (see Arsphenamine, III-F).
7. Saline, 0.85 per cent (see Arsphenamine, III-G).

B. When syringe method is to be used:

As above, except in place of gravity apparatus.

1. 10 to 50 c. c. all-glass syringes.
2. Rubber tubing, short, with adapters connecting syringe and needle.
3. Needles, 25 standard gauge, medium bevel.

### IV. INSPECTION OF DRUG.

An even more critical examination should be made than in case of arsphenamine, as neoarsphenamine occasionally decomposes in the ampule, even when no cracks are present. The powder should be freely mobile and lemon-yellow to canary-yellow in color. When it approaches a red color, is distinctly lumpy or solidified, do not use, but forward samples to the Hygienic Laboratory for examination.

Immerse in alcohol the ampules which have passed inspection, to further eliminate the presence of cracks and to clean the ampule.

### V. PREPARATION OF SOLUTION.

A. *Amount to be prepared at one time.*—In marked contrast to the practice with arsphenamine, do not prepare any more solution at one time than can be administered within 20 minutes.

B. *Concentration.*—Preferably, 1 decigram should be dissolved in 12.5 c. c. of water. This solution is then twice as concentrated as an arsphenamine solution. Concentrations as high as 1 decigram in 0.5 c. c. of water can be used in the field, or under other special circumstances. The highly concentrated solutions, however, should be given very slowly.

C. *Solution:*

1. Put in Erlenmeyer flask 12.5 c. c. sterile distilled water for each decigram of neoarsphenamine. In the field the concentrated solution can be made in the ampule itself by using water supplied in another ampule. (*Caution:* The distilled water used must be at room temperature and not to exceed 30° C.)

2. Open ampule and sprinkle—do not dump—powder into the water and, by preference, allow it to go into solution with no agitation whatever. Slight rotation of the flask is permissible. *Shaking the solution increases its toxicity and should be avoided.*

IN CASE THE SOLUTION IS NOT PERFECTLY CLEAR AND TRANSPARENT, IT SHOULD UNDER NO CIRCUMSTANCES BE USED. WHETHER IT REQUIRES ONE MINUTE OR TEN MINUTES FOR THE DRUG TO FORM A PERFECT SOLUTION IS UNIMPORTANT, BUT IT

SHOULD NOT REQUIRE MORE THAN TEN MINUTES. THE IMPORTANT POINT IS, NOT THE *RATE* OF SOLUBILITY BUT THE *COMPLETE* SOLUBILITY OF THE DRUG.

3. As soon as the neoarsphenamine is in solution, *filter* through washed gauze into tall, narrow cylinders and keep stoppered. It is preferable to use a size of cylinder which the solution will nearly fill. The smaller the air column over the solution the less the danger of increased toxicity. The solution is now ready to inject, and, in marked contrast to the arsphenamine solution, which should stand at least 30 minutes before its injection, the neoarsphenamine solution should be injected *immediately*, and in no case shall it be allowed to stand longer than 20 minutes.

4. *Dosage.*—The initial dose, as a rule, should be small. The average dose is about 0.6 gram for 150 pounds body weight; but no attempts to lay down a hard and fast rule in this regard are made. The patient must be individualized.

### VI. ADMINISTRATION.

The directions made under arsphenamine (p. 1875, VI) to apply the administration of neoarsphenamine, with the exception of the dosage, rate, and method of administration.

*Rate.*—If instructions have been followed, the proper rate is practically insured by the character of the apparatus, but it must be checked by using a time-piece, and in no case, *whether the gravity or the syringe method is used, should more than 0.1 gram of neoarsphenamine be injected in 30 seconds*, or 0.6 gram in 3 minutes. This time is one-half that required for arsphenamine. In giving concentrated solutions, especial care is necessary in order to carry out this rule.

### VII. REACTIONS.

See instructions under Arsphenamine, VII.

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## CONDENSED STANDARD INSTRUCTIONS FOR THE PREPARATION AND INTRAVENOUS ADMINISTRATION OF ARSPHENAMINE AND NEOARSPHENAMINE FOR THE MEDICAL DEPARTMENTS OF THE ARMY, OF THE NAVY, AND OF THE VETERANS' BUREAU, AND BY THE PUBLIC HEALTH SERVICE.

### ARSPHENAMINE.

Reactions are usually due to errors in technique or failure to adapt treatment to needs of patient. Arsphenamine is preferable to neoarsphenamine.

I. Use any properly licensed product.

II. Use only the gravity method.

III. *Materials needed.*—Erlenmeyer flasks, glass funnels, graduated cylinders, sterile gauze, sterilized freshly distilled water, normal sodium hydroxide solution, graduated pipette or burette, and gravity apparatus, consisting of 300 c. c. gravity cylinder, pure gum rubber tubing about 40 inches length, diameter $\frac{3}{32}$ inch., end adapter, glass window, slip needles, 19 standard gauge, 1½-inch cannula, medium bevel, and pinch cocks.

IV. *Inspection of drug.*—Record name and lot number; note especially dosage, color, and mobility of powder. If ampules are cracked, or if powder is other than pale yellow to lemon color and not freely mobile, *do not use.*

V. *Preparation of solution.*—Prepare not more than enough for 10 patients at one time.

A. Immerse ampules in alcohol.

B. Place in Erlenmeyer flask about 10 c. c. distilled water at room temperature for each 0.1 gram of the drug to be used, open ampule and sprinkle powder—do not dump—on surface of water; allow to go into solution with little or no agitations.

*Exception.*—Arsenobenzol (D. R. I.) requires for rapid solution either the use of hot water alone or cold water after having been previously moistened with ethyl alcohol (1 c. c. to 0.6 gm.). In either case immediate, vigorous shaking for a few seconds is essential to prevent the formation of gummy masses. After shaking, wait for complete solution and cooling.

C. *Alkalinization.*—When solution is complete, add 0.85 normal alkali (U. S. P.) for each 0.1 gram of drug (e. g., 1 gm. requires 8.5 c. c.). When standardized normal sodium hydroxide is not avilable, see detailed instructions for procedure. *The drop method of measuring the alkali should never be used.*

D. *Filtration.*—Filter the clear, alkalinized, amber colored solution through sterile gauze, four-ply, previously washed out with distilled water, into a graduated cylinder (not the gravity cylinder).

E. *Dilution.*—Dilute with distilled water so that 0.1 gram arsphenamine is contained in 25 c. c. (e. g., 100 c. c. contains 0.4 gram.)

F. *Time of standing.*—The filtered, perfectly clear, alkalinized and properly diluted solution should now *stand for 30 minutes* before being injected.

G. *Dosage.*—The initial dose should be small. The average dose is about 0.4 gm., but in this respect each case should receive individual consideration. For radical cure, full doses are indicated.

VI. *Administration:*

A. *Preparation of patient.*—In each instance attention should be given to the physical condition, effects of previous treatments of arsphenamine, etc.

B. The use of gravity apparatus, with level of fluid 3 feet above the vein, and 19 gauge needle should give proper rate of injection. However, it should be checked by a timepiece and not more than 25 c. c. (0.1 gm. of drug) should be injected per minute. It is advisable to take about 5 minutes for injection of the average dose (0.4 gm.).

VII. *Reactions.*—See detailed instructions.

NEOARSPHENAMINE.

I. Use any properly licensed product.

II. The gravity method of injection is strongly recommended, in view of the fact that reactions have occurred much less frequently in large clinics using this method as compared with large clinics using the syringe method. The syringe method, however, is a valuable one especially in the field. If the syringe is used, it should be with a 25-gauge needle connected to the syringe with a short piece of rubber tubing.

III. *Materials needed.*—Gravity apparatus, as for arsphenamine, or 10 to 50 c. c. all-glass syringes, with 25-gage needles and short rubber connections. Erlenmeyer flasks, funnels, sterile gauze, cylinders, and sterile freshly distilled water.

IV. *Inspection of drug* is even more important than in case of arsphenamine, as neoarsphenamine may, under certain conditions, change in the ampule. Note manufacturer, amount contained, and especially color, mobility, and bulk of the powder. If ampules are cracked, or if powder is other than canary yellow and not freely mobile, *do not use.*

V. *Preparation of solution:*

A. Immerse ampules in alcohol.

B. Place in an Erlenmeyer flask, 12.5 c. c. of distilled water for each 0.1 gram of the drug to be used, and sprinkle—do not dump—powder on the surface of the water. Allow it to go into solution without shaking. Slight agitation by rotating the flask is permissible. *Shaking increases toxicity.* While in the field and under special circumstances a concentration as high as 0.1 gram in 0.5 c. c. of water can be used, the use of 12.5 c. c. to each 0.1 gram is strongly recommended. *Discard any product which is incompletely soluble.*

C. *Filtration.*—Filter the perfectly clear solution through washed sterile gauze into a narrow graduated cylinder.

D. *Time of standing.*—Neoarsphenamine solutions, in marked contrast to arspheanmine solutions, should not stand but should be given at once, and *in no case should they be allowed to stand for more than 20 minutes. If any haziness or clouding occurs, do not use.*

E. *Dosage.*—The initial dose should be small. The average dose is 0.6 gm., but in this respect each patient should receive individual consideration.

VI. *Administration.*—Pay particular attention to preparation of patient and to rate of injection, which must not exceed the introduction of more than 0.1 gm. of neoarsphenamine in 30 seconds, whether the gravity or the syringe method be employed. The rate may be almost perfectly controlled by the use of the gravity apparatus specified. With the syringe method the use of the small sized needle specified and the short rubber tube connector will enable one to inject sufficiently slowly without great difficulty, although greater care is necessary than with the gravity method. The rate should be frequently checked with a timepiece.

VII. *Reactions.*—See detailed instructions.

○

**PLAINTIFF'S EXHIBIT No. 667.**

**Mimeographed Copy of Report of Conference.**

(Note: This exhibit admitted in evidence during taking of testimony of Dr. George W. McCoy in Chambers and annexed to his testimony so taken.)

PLAINTIFF'S EXHIBIT No. 668.

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

HYGIENIC LABORATORY—BULLETIN No. 113
JULY, 1918

# I. AN EXPERIMENTAL INVESTIGATION OF THE TOXICITY OF CERTAIN ORGANIC ARSENIC COMPOUNDS

By GEORGE B. ROTH

# II. ON THE TOXICITY OF EMETINE HYDROCHLORIDE, WITH SPECIAL REFERENCE TO THE COMPARATIVE TOXICITY OF VARIOUS MARKET PREPARATIONS

By GLEASON C. LAKE

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*United States Public Health Service.*

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# I. AN EXPERIMENTAL INVESTIGATION OF THE TOXICITY OF CERTAIN ORGANIC ARSENIC COMPOUNDS.[1]

By GEORGE B. ROTH.

[From the Division of Pharmacology, Hygienic Laboratory, United States Public Health Service, Washington, D. C.]

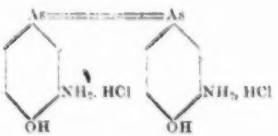
## PART I. SALVARSAN MADE IN AMERICA.

### INTRODUCTION.

Previous to the present war salvarsan [2] was exclusively a German product. Shortly after the outbreak of the war importation of salvarsan into the United States was stopped and, as the available supply was limited, it soon became practically impossible to obtain German-made salvarsan. To prevent the United States from being deprived of this valuable remedy, certain investigators in this country immediately took up the question of its manufacture and after a period of investigation placed upon the market, through the American agents of the German manufacturer of salvarsan, a substance which is practically identical with the German product.

About the same time that investigations were begun in the United States, similar studies were made in England, France, Canada, and Japan, which resulted in the production of compounds which are now used as substitutes for the original.

Salvarsan is the dihydrochloride of 3–3′ diamino 4–4′ dioxyarsenobenzene. Its structural formula as given by Ehrlich and Bertheim (1912), is as follows:



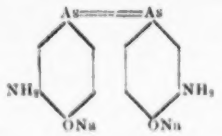

It is also known as kharsivan (England), arsenobenzol (France), arsenobenzol and salvarsan (United States), diarsenol (Canada), and arsaminol (Japan).

[1] Manuscript received for publication Jan. 24, 1918.

[2] The name salvarsan, as used in this paper, refers to the arsenic compound 3-3′ diamino 4-4′ dioxyarsenobenzene dihydrochloride.

The substance was first prepared by Bertheim in 1910 at the suggestion of Ehrlich, and was given the name "606" from the laboratory number of the preparation. It was later shown, by Ehrlich and others, to be a specific in combating infection with the organism of syphilis. It is unlike certain other organic preparations of arsenic in that it contains the arsenic in the trivalent form. The arsenic content of salvarsan averages about 30 per cent.

Salvarsan is a yellow powder which dissolves quite readily in hot water, making an acid solution. Aqueous solutions of salvarsan, either acid or alkaline, are very unstable. According to Ehrlich and Bertheim (1912), the powder itself is very readily oxidized in the air and forms amino-oxyphenylarsenic oxide which is (according to these investigators) about 20 times as toxic as salvarsan. When salvarsan is made alkaline with sodium hydroxide it forms the sodium salt of dioxydiamino-arsenobenzene, which, according to Ehrlich and Hata (1910), has the following structural formula:




Theoretically, the arsenic in salvarsan should exist in the organic form only. It has been found, however, that regardless of the fact that the utmost care may have been taken in the manufacture of salvarsan, a certain variable amount of arsenic will be present in the inorganic form. In this latter form arsenic is many times more toxic than in the form of salvarsan. It has been shown, furthermore, that at times certain organic arsenic compounds which possess a higher toxicity than salvarsan may enter into the composition of the finished product. Chemical analysis will not reveal the presence of these more toxic products and it is therefore essential to determine the toxicity of salvarsan by biologic tests before it is placed on the market.

A few reports have already been made relative to the biological effects of American-made salvarsan. The investigations of Wile (1916), of Ormsby and Mitchell (1916), and of Moody (1916) show that the salvarsan made in the United States is no more toxic clinically than the original German product; while the report of Gardner (1916) would indicate that salvarsan made in Canada is a true substitute for German salvarsan. In addition to the above-named clinical papers there has recently appeared a report of a very extensive laboratory investigation by Schamberg, Kolmer, and Raiziss (1917). These observers corroborated the findings of Wile (1916) and others by means of biological tests carried out in the laboratory.

The salvarsan made in America, obtainable at the time of this investigation,[1] was limited to three products, namely: (1) Arsenobenzol, which is manufactured by the Dermatological Research Laboratories, of Philadelphia; (2) diarsenol, a product made by the Synthetic Drug Co., of Toronto, Canada; and (3) salvarsan, which is manufactured by the Farbwerke-Hoechst Co., at the H. A. Metz Laboratories, of New York.

Inasmuch as requests have recently been made for information regarding the toxicity of American-made salvarsan, it was deemed advisable to carry out certain studies which would elucidate this point. Toxicity studies on rabbits, rats, and guinea pigs therefore were made with arsenobenzol (Dermatological Research Laboratories, of Philadelphia), diarsenol (Synthetic Drug Co., Toronto), and of salvarsan (Metz Laboratories). These products were compared with authentic samples of German salvarsan.

## DESCRIPTION OF SAMPLES OF SALVARSAN EXAMINED.

The samples of arsenobenzol examined were obtained in June, 1917, through the American agent of the Farbwerke-Hoechst Co., who at that time acted as the distributing agent for this product. Two lots were examined, bearing the lot numbers 257 and 271, respectively. One lot of the diarsenol which was examined was obtained in June, 1917, directly from the Synthetic Drug Co. The 10 individual ampoules which were received bore the letter A and were numbered from 32790 to 32799, inclusive. The second lot of diarsenol was received in November, 1917, directly from the manufacturers. The 12 individual ampoules were numbered B72900 to B72911, inclusive. The salvarsan made by the Metz Laboratories was received in September, 1917, and was obtained directly from the manufacturer. It was designated as lot A2.

One lot of German salvarsan, with which the American-made salvarsan was compared, was sent to the director of the Hygienic Laboratory in 1913 and bore no lot number. The second lot was said to be part of a consignment received from Germany a short time before the entrance of the United States into the war, and was obtained from the American agent of the Farbwerke-Hoechst Co. in July, 1917. It bore the lot number A28001

[1] This investigation was practically completed when the report of the Federal Trade Commission relative to the manufacture of salvarsan in America appeared. On Nov. 30, 1917 (see Public Health Reports, 1917, vol. 32, p. 2071), the Federal Trade Commission issued orders for licenses to manufacture and sell the product heretofore known under the trade names of "Salvarsan," "606," "Arsenobenzol," and "Arsaminol," to the following manufacturers: Farbwerke-Hoechst Co. (Herman A. Metz Laboratory), of New York; Dermatological Research Laboratories, of Philadelphia; and the Takamine Laboratory (Inc.), of New York. The drug is to be manufactured and sold under the name of "Arsphenamine."

COLOR, REACTION, AND SOLUBILITY OF THE VARIOUS PRODUCTS INVESTIGATED.

All of the preparations examined were put up in sealed glass ampoules and consisted of a light canary-yellow powder. The samples of arsenobenzol and diarsenol were of a slightly deeper yellow than the German salvarsan and therefore could be distinguished from the others by this difference in color alone. However, a sample of arsenobenzol recently received but not examined could not be distinguished from the German product in this way.

Every preparation was acid to litmus and required approximately the same amount of sodium hydroxide to make it distinctly alkaline to litmus, that is, about 1.2 c. c. of a 15 per cent solution for each 0.6 gm. of material.

Arsenobenzol was somewhat less soluble in hot water than the other preparations. While no accurate quantitative methods were used in determining the solubilities of these preparations, it appeared that the 1913 sample of German salvarsan was slightly more soluble in hot water than any of the others.

In order that the results of the present investigation may be readily compared with the results obtained by previous investigators, an epitome of the literature relating to the determination of the toxicity of salvarsan by a similar laboratory method is given in Table 1. The table relates only to the results obtained from the intravenous administration of an alkaline solution of the drug to rabbits. No data are available with reference to the toxicity of the drug for guinea pigs, when administered by the intravenous route; while for rats, only two references were found. Schamberg, Kolmer and Raiziss (1917), carried out an extensive series of experiments upon rats, the drug being injected through the exposed jugular vein, and found that these animals could tolerate arsenobenzol (Phila. Dermatological Research Laboratory) in amounts ranging from 0.070 to 0.100 gm. per kilo of body weight. The drug was dissolved in 1 c. c. of water. Hata and Hirano (1916) determined the tolerated dose of arsaminol for rats, when given intravenously, as 0.1 gm. per kilo of body weight.

TABLE 1.—*Epitome of literature relating to the toxicity of salvarsan when given intravenously to rabbits as an alkaline aqueous solution.*

| Observer. | Where reported. | Preparation. | Dose per kilo. | Remarks. |
|---|---|---|---|---|
| Castelli..... | Ztschr. f. Chemotherap. Orig. 1912-3, p. 321. | Salvarsan (German). | Dosis tolerata 0.1 gm. | |
| Ehrlich and Hata. | Chemotherapie der Spirillosen, 1910, p. 21. | .....do..... | .....do..... | |
| Hata and Hirano. | Saikin - Gaku - Zasshi, 1916, No. 244, p. 321. | Salvarsan (German) and arsaminol (Japan). | M. L. D.: 0.1 gm. of either preparation. | Observation period, weeks. |
| Hoke and Ribl. | Ztschr. f. Exp. Path. u. Therap. 1911, vol. 9, p. 332. | Salvarsan (German). | M. L. D.: 0.204 gm. | Given through jugular vein as a 0.5 per cent solution in 0.9 per cent saline. |
| Lev. 8 | | | | |

TABLE 1.—*Epitome of literature relating to the toxicity of salvarsan when given intravenously to rabbits as an alkaline aqueous solution*—Continued.

| Observer. | Where reported. | Preparation. | Dose per kilo. | Remarks. |
|---|---|---|---|---|
| Hoppe and Schreiber. | Verhandlung. Deutsch Kongress f. Innere Med. 1910, p. 243. | ....do.... | Toxic dose (M. L. D?) 0.15 gm. | |
| Kerstan | Centralbl. f. Bakt. 1912, vol. 65, p. 369 (Orig.). | ....do.... | Dosis tolerata 0.075 gm. (ave). | 0.1 gm. killed 30 per cent in 1 to 2 days; given as 1 or 2 per cent solution. |
| Kohmann | Münch. Med. Wchnschr. 1912, vol. 59, p. 18. | ....do.... | M. L. D. (delayed death); 0.1 gm.; M. L. D. (acute) 0.2 gm. | Perfused slowly as 2 to 3.5 per cent solution. 0.1 gm. killed in 9 days; 0.2 gm. killed in 2 hours. Observed for 18 days. |
| Marschalkó and Vesprémi. | Deutsch. Med. Wchnschr. 1912, vol. 38, p. 1222. | ....do.... | Dosis tolerata less than 0.1 gm. | Given in saline as a 1 per cent solution. |
| Pearce and Brown. | J. Pharmacol. and Exper. Therap. 1917, vol. 9, p. 354. | ....do.... | M. L. D.; 0.112 gm. | M. L. D. includes death either from acute or chronic poisoning. Injection rate 2 c. c. per minute; given as a 1 per cent solution. (Personal communication.) |
| Schamberg, Kolmer and Raiziss. | Jr. Cutaneous Dis. 1917, vol. 35, p. 286. | Arseno-benzol (Phila. Derm. Research Lab.) | Tolerated dose 0.060 gm. | Injection time several minutes; wait of 2 minutes after one-half was given. Given in 15 c. c. distilled water. Animal should live 2 weeks. |
| Willcox and Webster. | Brit. M. J. 1916, vol. 1, p. 473. | Kharsivan (English salvarsan). | Tolerated dose 0.1 gm. | Given as a 1 per cent solution. |

Some of the observers quoted in this table of the literature on salvarsan used acid as well as alkaline solutions of the drug, and found that the acid solution was considerably more toxic for rabbits when given intravenously than was the alkaline solution. Similar investigations on the toxicity of the acid solution of salvarsan for rabbits were made by Hering (1910), Auer (1911), and Miedreich (1913).

## ARSENIC CONTENT OF THE SALVARSAN PREPARATIONS EXAMINED.

The arsenic content of the salvarsan preparations [1] used in this investigation was determined by the method described by Ewins (1916), and is shown in the following table:

TABLE 2.

| Preparation. | Manufacturer's or laboratory No. | Arsenic content (per cent). |
|---|---|---|
| Salvarsan (German) | 1913 sample | 29.5 |
| Do | 1917 sample (A25001) | 31.7 |
| Salvarsan (Metz Laboratory) | A2 | 30.4 |
| Arsenobenzol (Phila. Derm. Research Lab.) | 257 | 30.7 |
| Do | 271 | 30.9 |
| Diarsenol (Synthetic Drug Co.) | A32798 | 29.8 |
| Do | B72911 | 29.8 |

[1] I am indebted to Dr. C. N. Myers of the Hygienic Laboratory for the determination of the salvarsan preparation made by the Metz Laboratory and to Dr. A. S. Seidell, also of the Hygienic Laboratory, for the determination of all others.

The above table shows that the arsenic content of the preparations examined ranges from 29.5 to 31.7 per cent and that, for all samples it averages 30.4 per cent. It is furthermore shown that the greatest variation is between the two German samples examined, the difference being over 2 per cent.

TEST ANIMALS EMPLOYED.

Healthy rabbits, rats, and guinea pigs were employed as test animals in the present investigation. The rabbits were obtained from various sources and consisted largely of the short-haired Belgian type, although many white, black and mixed types were used. An attempt was made to secure rabbits of a weight ranging between 1.2 and 1.8 kilos, but it was found impossible to secure invariably animals which met the above weight requirements.

The rats were, in practically all cases ordinary albino rats; in some instances they were of a mixed type and presented a mottled coating of white and black hair. The rats were obtained for the most part from the Wistar Institute of Philadelphia and from local dealers.

The guinea pigs were obtained from fresh Hygienic Laboratory stock.

In these experiments the animals were confined in suitable laboratory cages and were fed the usual laboratory diet, which previous experience had shown to be adequate.

*Length of observation period of animals.*— Although the animals were practically all kept for one month before being discharged, it was considered that a two weeks' period was sufficient, and perhaps best, as a time limit for the estimation of the minimal lethal dose. This time limit was chosen largely because it was shown by Burnascheff (1912) that when salvarsan was given to rabbits intravenously in alkaline solution, only traces of arsenic could be found in the various organs of the body after three weeks. Furthermore, a two weeks' period obviates other possible factors, such as decreased resistance, due to prolonged confinement under laboratory conditions.

In all the following tables, if death did not occur within two weeks, or, if it occurred later than two weeks after the injection, the result is designated by a minus sign (−). This sign therefore means that the animal lived for two weeks or longer. If death occurred before the two weeks had elapsed, the result is designated by a plus sign (+).

*Method of administering the drugs.*—The drugs were administered intravenously in all cases, in order not only to preclude any loss of the drug by nonabsorption but to eliminate differences in the rate of absorption, such as may occur when the drug is given subcutaneously; moreover intravenous administration is the method usually employed in therapeutics. In the rabbit, injections were made in the marginal

ear vein; in the rat, the large superficial vein of the inner side of the hind leg was employed in practically all of the experiments, although in a small number of instances, one of the superficial veins at the base of the tail was used. In the guinea pig, one of the superficial veins of the outer side of the front leg was used.

The vessel used in the rat and guinea-pig was exposed by a small skin incision; by compressing it beyond the incision the injection of the drug was rendered simple. An anesthetic was neither required nor used in any of the experiments. To prevent hemorrhage in the guinea pig and rat a small compress of cotton was placed between the skin and the vessel; this was removed, usually after a day or two. If this procedure did not prevent bleeding, the vessel was ligated. Bleeding was prevented in the rabbit by means of an improvised wire clamp.

For measuring the doses required for rats and guinea pigs, glass syringes of 1 or 2 c. c. capacity were used. The same syringe which was used for measuring the drug was also used for its injection into these animals. The syringes had been standardized by the manufacturers, but before being used they were standardized in the laboratory against each other.

In the earlier experiments the drugs were given to rabbits by means of glass syringes of 5 to 10 c. c. capacity; while in the later experiments a burette of 25 c. c. capacity was used. Injections were made in rabbits by means of syringes, or from a burette by gravity.

The same syringes, cylinders, and burette were used throughout the investigation.

### MANNER OF MAKING THE SALVARSAN SOLUTION.

The solution of salvarsan was made up as follows unless otherwise stated. To make a 1 per cent solution of salvarsan an ampoule containing 0.6 gm. of the drug[1] was dissolved in a 100 c. c. glass-stoppered cylinder which contained about 50 c. c. of hot water (recently redistilled in glass). The distilled water had previously been sterilized by boiling and was transferred to the cylinder immediately thereafter, so that the solution of the salvarsan was made in water that had a temperature only a little lower than the boiling point. After a complete solution of the drug through vigorous shaking, a 15 per cent solution of sodium hydroxide was added drop by drop (shaking after the addition of each drop or two) until the solution was slightly alkaline. This required about 1.2 c. c. of the sodium

[1] The salvarsan was invariably weighed on an analytical balance previous to making the solution. The weight was found to be practically as stated. In a few instances a variation of about 10 mg., either greater or less than stated, was found.

hydroxide solution. Sterile distilled water was then added to make a 1 per cent solution. When prepared in the above manner the solutions were always clear and did not require filtration.

CONCENTRATIONS EMPLOYED AND RATE OF ADMINISTRATION.

The salvarsan preparations were given intravenously as 1 or 2 per cent alkaline aqueous solutions. They were given to rats and guinea pigs at the rate of about 0.5 to 0.7 c. c. per minute (leg vein), while to rabbits the rate was increased to about 1 c. c. per minute (ear vein). If the injections were made at the above rate immediate symptoms rarely resulted. If immediate symptoms occurred the injection was stopped until their disappearance and then resumed.

LENGTH OF TIME SOLUTIONS STOOD BEFORE BEING USED.

The injections were almost invariably made as soon as possible after making up the solution. Except in one instance, a solution was never used for toxicity tests after it was more than three hours old. In that instance it was tested 5 and 6 hours after making, in order to determine whether it had deteriorated.

ANTISEPTIC METHODS OBSERVED.

The animals were prepared for the injection of the drugs by shaving the hair over the site of the skin incision and then painting the skin with tincture of iodine, or washing it with 70 per cent alcohol. All instruments were sterilized by boiling.

TABLE 3.—*Toxicity of salvarsan, German (1913 sample), when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M.=male; F.=female. | Weight in kilos. | Dose per kilo. | Result: +dead; —living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 69 | F | 1.61 | 60 | + | Died 6 d. |
| 70 | F | 1.62 | 60 | — | Disch. 32 d. |
| 71 | F | 1.66 | 60 | — | Do. |
| 75 | M | 1.54 | 60 | + | Died 13 d. |
| 68 | M | 1.52 | 100 | — | Disch. 33 d. |
| 73 | F | 1.53 | 100 | — | Do. |
| 77 | F | 1.94 | 100 | + | Died 4 d. |
| 79 | F | 1.77 | 100 | + | Do. |
| 72 | F | 1.59 | 175 | + | Died 2 d. |
| 74 | F | 1.59 | 175 | + | Died 1 hr. |
| 76 | F | 1.56 | 175 | + | Died 2 d. |
| 78 | M | 1.71 | 175 | + | Died 3 d. |

**Weight** variation, 1.52 to 1.94 kilos.
**Average** weight, 1.64 kilos.
**Variation** in amount of fluid injected, 9.3 to 29.9 c. c.

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TABLE 4.—*Toxicity of salvarsan, German (1913 sample), when given intravenously to rats (leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 131 | M | 170 | 80 | − | Disch. 31 d. |
| 132 | M | 122 | 80 | − | Do. |
| 137 | F | 110 | 80 | − | Do. |
| 138 | M | 138 | 80 | − | Do. |
| 78 | M | 178 | 60 | − | Do. |
| 83 | F | 124 | 60 | − | Do. |
| 89 | F | 160 | 60 | − | Disch. 30 d. |
| 94 | M | 135 | 60 | − | Do. |
| 133 | M | 121 | 70 | − | Disch. 31 d. |
| 134 | F | 170 | 70 | + | Died 18 hrs. |
| 139 | F | 158 | 70 | − | Disch. 31 d. |
| 140 | F | 122 | 70 | − | Do. |
| 79 | F | 180 | 80 | + | Died 4 d. |
| 86 | F | 130 | 80 | + | Died 15 hrs. |
| 90 | F | 169 | 80 | − | Disch. 30 d. |
| 95 | M | 140 | 80 | − | Do. |
| 135 | M | 170 | 90 | + | Died 18 hrs. |
| 136 | F | 122 | 90 | + | Do. |
| 141 | F | 142 | 90 | − | Disch. 31 d. |
| 142 | M | 138 | 90 | − | Do. |
| 80 | F | 122 | 100 | + | Died 6 d. |
| 84 | F | 118 | 100 | + | Died 4 d. |
| 91 | F | 179 | 100 | − | Disch. 30 d. |
| 96 | M | 116 | 100 | − | Do. |
| 81 | M | 116 | 135 | + | Died 18 hrs. |
| 87 | M | 130 | 135 | + | Do. |
| 92 | F | 166 | 135 | + | Died 5 hrs. |
| 97 | F | 134 | 135 | + | Died 15 hrs. |
| 82 | F | 104 | 175 | + | Do. |
| 85 | F | 110 | 175 | + | Do. |
| 93 | F | 147 | 175 | + | Died 1 min. |
| 98 | M | 166 | 175 | + | Died 5 hrs. |

Weight variation, 104 to 179 gm.
Average weight, 138 gm.
Variation in amount of fluid injected, 0.55 to 2.57 c. c.

TABLE 5.—*Toxicity of salvarsan, German (1917 sample A 28601), when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 106 | M | 1.43 | 60 | − | Disch. 31 d. |
| 107 | M | 1.5 | 60 | + | Died 6 d. |
| 109 | F | 1.52 | 60 | − | Disch. 31 d. |
| 112 | F | 1.77 | 60 | − | Do. |
| 105 | F | 1.79 | 80 | − | Do. |
| 108 | M | 1.89 | 80 | + | Died 7 d. |
| 115 | F | 1.77 | 80 | − | Died 21 d. |
| 116 | F | 1.82 | 80 | + | Died 7 d. |
| 110 | F | 1.7 | 100 | − | Disch. 32 d. |
| 111 | F | 1.52 | 100 | + | Died 7 d. |
| 113 | M | 1.57 | 100 | + | Died 8 d. |
| 114 | F | 1.66 | 100 | − | Disch. 31 d. |
| 117 | F | 1.48 | 135 | + | Died 6 hrs. |
| 118 | F | 1.39 | 135 | + | Died 3 d. |
| 119 | F | 1.44 | 135 | − | Disch. 31 d. |
| 120 | F | 1.52 | 135 | + | Died 6 hrs. |
| 121 | F | 1.3 | 175 | + | Died 2 d. |
| 122 | F | 1.48 | 175 | + | Died 6 d. |
| 123 | F | 1.42 | 175 | + | Died 2 d. |
| 124 | F | 1.18 | 175 | + | Died 3 d. |

Weight variation, 1.18 to 1.82 kilos.
Average weight, 1.54 kilos.
Variation in amount of fluid injected, 8.6 to 23.9 c. c.

TABLE 6.—*Toxicity of salvarsan, German (1917 sample A28001), when given intravenously to rats (leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male. F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 155 | F | 194 | 50 | − | Disch. 31 d. |
| 156 | M | 192 | 50 | − | Do. |
| 161 | F | 140 | 50 | − | Disch. 36 d. |
| 162 | F | 192 | 50 | + | Died, 2 d. |
| 157 | F | 170 | 60 | − | Disch. 31 d. |
| 165 | F | 140 | 60 | − | Disch. 33 d. |
| 166 | M | 150 | 60 | − | Disch. 36 d. |
| 167 | F | 140 | 60 | + | Died 14 hrs. |
| 168 | M | 152 | 70 | − | Disch. 33 d. |
| 174 | M | 118 | 70 | − | Do. |
| 169 | F | 140 | 70 | − | Do. |
| 188 | M | 140 | 70 | − | Disch. 32 d. |
| 158 | M | 190 | 76 | + | Died 1 hr. |
| 159 | F | 116 | 80 | − | Disch. 31 d. |
| 160 | M | 184 | 80 | − | Disch. 36 d. |
| 163 | F | 150 | 80 | + | Died 14 hrs. |
| 164 | M | 162 | 80 | + | Do. |
| 170 | M | 142 | 90 | − | Disch. 33 d. |
| 171 | M | 142 | 90 | − | Do. |
| 175 | M | 120 | 90 | − | Do. |
| 189 | M | 140 | 90 | + | Died 8 min. |
| 172 | M | 122 | 100 | − | Disch. 33 d. |
| 173 | M | 120 | 100 | − | Do. |
| 190 | M | 132 | 100 | + | Died 5 hrs. |
| 191 | M | 134 | 100 | − | Disch. 32 d. |
| 194 | F | 116 | 110 | + | Died 4 hrs. |
| 176 | M | 124 | 135 | − | Died 22 d. |
| 178 | M | 128 | 135 | + | Died 14 min. |
| 192 | M | 130 | 135 | + | Died 10 min. |
| 193 | M | 118 | 135 | + | Died 2 hrs. |
| 177 | F | 122 | 175 | + | Died 45 min. |
| 179 | F | 110 | 175 | + | Died 5 hrs. |
| 195 | F | 116 | 175 | + | Do. |
| 196 | F | 106 | 175 | + | Died 2 hrs. |

Weight variation, 106 to 194 gm.
Average weight, 141 gm.
Variation in amount of fluid injected, 0.7 to 2.1 c. c.

TABLE 7.—*Toxicity of salvarsan, German (1917 sample A28001), when given intravenously to rats (leg vein) as a 2 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 443 | M | 112 | 50 | − | Disch. 30 d. |
| 444 | M | 110 | 50 | − | Do. |
| 445 | M | 112 | 50 | − | Do. |
| 446 | F | 140 | 50 | + | Died 4 hrs. |
| 439 | M | 100 | 60 | + | Died 10 d. |
| 440 | F | 100 | 60 | − | Disch. 30 d. |
| 441 | M | 114 | 60 | − | Do. |
| 442 | M | 100 | 60 | − | Died 20 d. |
| 435 | M | 104 | 70 | − | Disch. 30 d. |
| 436 | M | 102 | 70 | + | Died 4 hrs. |
| 437 | M | 104 | 70 | + | Died 5 hrs. |
| 438 | M | 110 | 70 | + | Died 7 hrs. |
| 412 | M | 122 | 80 | − | Disch. 30 d. |
| 413 | M | 128 | 80 | + | Died 7 hrs. |
| 414 | M | 136 | 80 | − | Disch. 30 d. |
| 415 | M | 140 | 80 | − | Do. |
| 411 | M | 110 | 89 | + | Died 2 hrs. |
| 420 | M | 110 | 90 | + | Died 5 hrs. |
| 421 | M | 110 | 90 | + | Died 3 hrs. |
| 422 | M | 110 | 90 | + | Do. |
| 407 | M | 140 | 100 | + | Died 40 min. |
| 408 | M | 125 | 100 | + | Died 3 hrs. |
| 409 | F | 150 | 100 | + | Died 20 min. |
| 410 | F | 150 | 100 | + | Died 10 min. |
| 416 | M | 120 | 135 | + | Died 1 hr. |
| 417 | M | 120 | 135 | + | Died 20 min. |
| 418 | M | 110 | 135 | + | Died 10 min. |
| 419 | M | 110 | 135 | + | Died 5 min. |

Weight variation, 100 to 150 gm.
Average weight, 118 gm.
Variation in amount of fluid injected, 0.28 to 0.81 c. c.
*Remarks.*—Rat No. 446 was somewhat emaciated when the drug was given.

TABLE 8.—*Toxicity of salvarsan (Metz Laboratory, lot A2, when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution*

| No. of animal | Sex: M = male; F = female | Weight in kilos | Dose per kilo | Result: + dead; − living | Time of death or discharge |
|---|---|---|---|---|---|
| | | | *mgm.* | | |
| 140 | F | 1.4 | 80 | − | Disch. 31 d. |
| 141 | M | 1.2 | 90 | − | Died 24 d. |
| 142 | F | 1.5 | 90 | + | Died 10 d. |
| 143 | F | 1.45 | 60 | − | Disch. 31 d. |
| 149 | F | 1.5 | 80 | − | Do. |
| 150 | M | 1.5 | 80 | + | Died 1 d. |
| 152 | M | 1.55 | 80 | − | Disch. 31 d. |
| 151 | M | 2.65 | 82 | + | Died 9 d. |
| 137 | F | 2.25 | 100 | + | Died 3 d. |
| 138 | F | 1.1 | 140 | + | Died 2 d. |
| 139 | M | 1.95 | 100 | − | Disch. 31 d. |
| 144 | M | 1.8 | 100 | + | Died 10 d. |
| 153 | F | 1.7 | 150 | + | Died 1 d. |
| 154 | M | 1.55 | 135 | + | Do. |
| 155 | F | 1.55 | 135 | + | Do. |
| 156 | F | 1.4 | 135 | + | Died 2 d. |
| 145 | F | 1.1 | 175 | + | Died 6 hr. |
| 146 | F | 1.25 | 125 | + | Died 2 d. |
| 147 | M | 1.45 | 175 | + | Died 1 hr. |
| 148 | M | 1.45 | 175 | + | Do. |

Weight variation, 1.2 to 1.7 kilos.
Average weight, 1.41 kilos.
Variation in amounts of fluid injected, 7.2 to 25.4 c. c.

TABLE 9.—*Toxicity of salvarsan (Metz Laboratory, lot A2), when given intravenously to cats (leg vein) as a 1 per cent alkaline aqueous solution*

| No. of animal | Sex: M = male; F = female | Weight in grams | Dose per kilo | Result: + dead; − living | Time of death or discharge |
|---|---|---|---|---|---|
| | | | *mgm.* | | |
| 260 | F | 140 | 50 | − | Disch. 31 d. |
| 261 | M | 130 | 50 | − | Do. |
| 270 | F | 120 | 50 | − | Do. |
| 271 | M | 120 | 50 | − | Do. |
| 262 | F | 130 | 60 | + | Died 20 min. |
| 263 | F | 130 | 60 | − | Disch. 31 d. |
| 272 | M | 110 | 60 | − | Do. |
| 273 | F | 110 | 60 | − | Do. |
| 276 | M | 112 | 65 | + | Died 1 min. |
| 274 | M | 110 | 70 | + | Died 35 min. |
| 275 | F | 110 | 70 | + | Died 17 min. |
| 285 | M | 120 | 70 | + | Died 30 min. |
| 286 | F | 120 | 70 | + | Died 2 d. |
| 264 | F | 128 | 80 | + | Died 1 min. |
| 265 | M | 130 | 80 | − | Disch. 31 d. |
| 282 | F | 112 | 80 | − | Do. |
| 277 | M | 110 | 85 | + | Died 3 hrs. |
| 278 | M | 130 | 90 | − | Disch. 31 d. |
| 279 | M | 135 | 90 | + | Died 6 hrs. |
| 287 | M | 115 | 90 | + | Died 2 hrs. |
| 288 | F | 118 | 90 | − | Disch. 31 d. |
| 266 | F | 125 | 100 | + | Died 3 d. |
| 267 | M | 124 | 100 | + | Died 30 min. |
| 280 | M | 120 | 100 | + | Died 17 hrs. |
| 281 | M | 120 | 100 | + | Died 25 min. |
| 268 | M | 120 | 115 | + | Died 35 min. |
| 269 | M | 120 | 115 | + | Died 1 min. |
| 283 | M | 110 | 115 | + | Died 20 min. |
| 284 | F | 110 | 115 | + | Died 10 min. |
| 289 | M | 113 | 135 | + | Died 5 hrs. |
| 290 | F | 112 | 135 | + | Died 9 hrs. |
| 291 | M | 110 | 135 | + | Died 4 hrs. |
| 292 | F | 112 | 135 | + | Died 5 hrs. |

Weight variation, 110 to 140 gm.
Average weight, 119 gm.
Variation in amount of fluid injected, 6.6 to 15.5 c. c.

TABLE 10.—*Toxicity of salvarsan (Metz Laboratory), Lot A2, when given intravenously to rats (leg vein) as a 2 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *mgm.* | | |
| 378 | F | 148 | 50 | + | Died 10 d. |
| 379 | F | 142 | 50 | − | Disch. 31 d. |
| 380 | F | 128 | 50 | − | Do. |
| 381 | M | 124 | 50 | − | Do. |
| 359 | M | 110 | 60 | − | Do. |
| 360 | F | 110 | 60 | − | Do. |
| 361 | F | 120 | 60 | + | Died 5 d. |
| 362 | F | 120 | 60 | − | Disch. 31 d. |
| 374 | F | 130 | 70 | + | Died 4 hrs. |
| 375 | F | 138 | 70 | + | Died 5 d. |
| 376 | F | 102 | 70 | − | Disch. 31 d. |
| 377 | F | 100 | 70 | + | Died 10 d. |
| 363 | F | 130 | 80 | + | Died 2 d. |
| 364 | F | 108 | 80 | + | Died 11 min. |
| 365 | F | 130 | 80 | − | Disch. 31 d. |
| 366 | F | 108 | 80 | + | Died 25 min. |
| 370 | M | 114 | 90 | + | Died 5 min. |
| 371 | M | 118 | 90 | + | Died 2 d. |
| 372 | F | 112 | 90 | − | Disch. 31 d. |
| 373 | F | 108 | 90 | − | Do. |
| 355 | M | 150 | 100 | + | Died 50 min. |
| 356 | F | 160 | 100 | + | Died 9 min. |
| 357 | F | 102 | 100 | + | Died 30 min. |
| 358 | F | 102 | 100 | + | Died 1 hr. |
| 367 | F | 150 | 112 | + | Died 4 min. |
| 368 | F | 150 | 135 | + | Died 10 min. |
| 369 | F | 112 | 135 | + | Died 40 min. |
| 382 | F | 110 | 135 | + | Died 3 hrs. |
| 383 | F | 110 | 135 | + | Died 30 min. |

Weight variation, 100 to 160 gm.
Average weight, 123 gm.
Variation in amount of fluid injected, 0.31 to 1.08 c. c.

TABLE 11.—*Toxicity of arsenobenzol (lot No. 257, Philadelphia Dermatological Research Laboratory) when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *mgm.* | | |
| 80 | F | 1.35 | 60 | − | Disch. 30 d. |
| 81 | M | 1.47 | 60 | − | Do. |
| 82 | F | 1.64 | 60 | − | Do. |
| 87 | F | 1.71 | 60 | − | Disch. 31 d. |
| 93a | F | 1.53 | 60 | − | Do. |
| 88 | M | 1.38 | 80 | + | Died 7 d. |
| 89 | F | 1.38 | 80 | − | Disch. 31 d. |
| 90 | M | 1.54 | 80 | − | Disch. 30 d. |
| 91 | F | 1.4 | 80 | + | Died 9 d. |
| 83 | F | 1.42 | 100 | − | Died 19 d. |
| 84 | F | 1.7 | 100 | + | Died 4 d. |
| 85 | F | 1.67 | 100 | + | Do. |
| 86 | M | 1.5 | 100 | + | Died 10 d. |
| 95 | F | 1.38 | 100 | − | Disch. 30 d. |
| 92 | F | 1.54 | 135 | + | Died 1 min. |
| 93b | M | 1.45 | 135 | + | Died 3 d. |
| 94 | F | 1.36 | 135 | + | Died 2 hrs. |
| 96 | F | 1.35 | 135 | + | Died 7 d. |
| 97 | F | 1.2 | 175 | + | Died 3 d. |
| 98 | M | 1.16 | 175 | + | Do. |
| 99 | F | 1.13 | 175 | + | Died 2 d. |
| 104 | F | 1.66 | 175 | − | Disch. 31 d. |

Weight variation, 1.13 to 1.71 kilos.
Average weight, 1.48 kilos.
Variation in amount of fluid injected, 8.8 to 29 c. c.

*Remarks.*—The dose given to animal 104 was over twice as large as that given to 88 and 91, yet 104 survived, whereas 88 and 91 died within 2 weeks. Rabbit 80 developed, after 15 hours, slight swelling at the base of the injected ear. Rabbit No. 104 had a slight blood stained exudate in both ears when discharged.

TABLE 12.—*Toxicity of arsenobenzol (lot No. 257, Philadelphia dermatological Research Laboratory) when given intravenously to rats (leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 119 | M | 160 | 50 | − | Disch. 31 d. |
| 120 | M | 142 | 50 | − | Do. |
| 123 | F | 150 | 50 | − | Disch. 30 d. |
| 124 | M | 122 | 50 | − | Do. |
| 99 | M | 143 | 60 | − | Disch. 31 d. |
| 104 | M | 142 | 60 | + | Died 3 d. |
| 106 | M | 127 | 60 | − | Disch. 30 d. |
| 301 | M | 120 | 60 | − | Do. |
| 121 | M | 145 | 70 | − | Disch. 31 d. |
| 122 | M | 124 | 70 | − | Do. |
| 125 | F | 155 | 70 | − | Disch. 30 d. |
| 126 | M | 130 | 70 | − | Died 20 d. |
| 110 | F | 130 | 75 | + | Died 3 hrs. |
| 100 | F | 148 | 80 | + | Died 11 hrs. |
| 105 | M | 151 | 80 | − | Disch. 30 d. |
| 111 | M | 135 | 80 | + | Died 7 d. |
| 112 | M | 130 | 80 | + | Died 21 hrs. |
| 127 | F | 150 | 90 | + | Died 20 min. |
| 128 | M | 112 | 90 | + | Died 1 hr. |
| 129 | M | 122 | 90 | + | Died 18 hrs. |
| 130 | F | 145 | 90 | + | Died 6 hrs. |
| 101 | M | 115 | 100 | + | Died 4 hrs. |
| 107 | F | 156 | 100 | + | Died 42 min. |
| 113 | M | 150 | 100 | + | Died 11 min. |
| 115 | F | 134 | 100 | + | Died 13 min. |
| 102 | F | 135 | 135 | + | Died 2 hrs. |
| 108 | M | 136 | 135 | + | Died 40 min. |
| 114 | F | 130 | 135 | + | Died 7 min. |
| 116 | F | 124 | 135 | + | Died 10 min. |
| 117 | F | 112 | 175 | + | Died 14 min. |
| 103 | F | 118 | 175 | + | Died 1 min. |
| 109 | F | 125 | 175 | + | Do. |
| 118 | M | 112 | 175 | + | Died 11 min. |

Weight variation, 112 to 160 gm.
Average weight, 134 gm.
Variation in amount of fluid injected, 0.61 to 2.18 c. c.

TABLE 13.—*Toxicity of arsenobenzol (Lot No. 257, Philadelphia Dermatological Research Laboratory) when given intravenously to rats (leg vein) as a 2 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 310 | F | 122 | 60 | + | Died 3 hrs. |
| 311 | M | 130 | 60 | − | Disch. 30 d. |
| 312 | M | 134 | 60 | − | Do. |
| 313 | M | 132 | 60 | − | Do. |
| 319 | M | 134 | 70 | − | Do. |
| 320 | M | 112 | 70 | − | Do. |
| 321 | M | 122 | 70 | − | Do. |
| 322 | M | 120 | 70 | − | Do. |
| 323 | M | 110 | 80 | − | Do. |
| 324 | M | 140 | 80 | − | Do. |
| 325 | M | 146 | 80 | − | Do. |
| 326 | M | 144 | 80 | − | Do. |
| 306 | M | 125 | 90 | + | Died 30 min. |
| 307 | M | 130 | 90 | + | Died 5 hrs. |
| 308 | M | 130 | 90 | − | Disch. 30 d. |
| 309 | M | 136 | 90 | − | Do. |
| 302 | M | 120 | 100 | + | Died 2 hrs. |
| 303 | M | 122 | 100 | − | Disch. 30 d. |
| 304 | M | 122 | 100 | + | Died 4 hrs. |
| 305 | M | 122 | 100 | − | Disch. 30 d. |
| 317 | M | 138 | 110 | + | Died 1 min. |
| 314 | M | 140 | 135 | + | Died 5 hrs. |
| 315 | M | 140 | 135 | + | Died 10 hrs. |
| 316 | F | 144 | 135 | + | Died 1 hr. |
| 318 | F | 136 | 135 | − | Disch. 30 d. |
| 327 | M | 110 | 175 | + | Died 30 min |
| 328 | M | 120 | 175 | + | Do. |
| 329 | M | 112 | 175 | + | Died 20 min. |
| 330 | F | 118 | 175 | + | Died 3 hrs. |

Weight variation, 110 to 146 gm.
Average weight, 129 gm.
Variation in amount of fluid injected, 0.37 to 1.95 c. c.

*Remarks.*—Rats Nos. 310 and 316 were pregnant.

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TABLE 14.—*Toxicity of arsenobenzol (Lot No. 271, Philadelphia Dermatological Research Laboratory) when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M = male, F = female. | Weight in kilos. | Dose per kilo. | Result: + dead, − living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | Mgm. | | |
| 46 | M | 1.68 | 30 | | Disch. 31 d. |
| 45 | F | 1.73 | 30 | − | Do. |
| 19 | M | 2.30 | 30 | − | Died 16 d. |
| 31 | M | 2.1 | 30 | − | Disch. 43 d. |
| 20 | F | 2.1 | 60 | − | Disch. 46 d. |
| 50 | F | 1.48 | 45 | − | Death 30 d. |
| 51 | M | 1.55 | 45 | − | Do. |
| 21 | M | 1.65 | 60 | − | Died 4 d. |
| 22 | F | 1.65 | 60 | + | Died 5 d. |
| 29 | F | 2.35 | 60 | − | Disch. 14 d. |
| 30 | M | 1.7 | 60 | + | Died 3 d. |
| 35 | F | 1.6 | 60 | + | Died 6 d. |
| 23 | F | 1.64 | 80 | | Died 31 d. |
| 28 | F | 1.5 | 80 | | Disch. 15 d. |
| 32 | M | 1.45 | 80 | | Died 14 d. |
| 36 | F | 1.54 | 80 | | Died 7 d. |
| 24 | F | 1.62 | 100 | + | Died 10 d. |
| 33 | F | 1.46 | 100 | + | Died 5 d. |
| 34 | F | 1.45 | 100 | + | Died 4 d. |
| 37 | F | 1.5 | 100 | + | Died 3 d. |
| 38 | F | 1.5 | 100 | + | Died 2 d. |
| 49 | M | 1.47 | 125 | + | Died 8 d. |
| 25 | M | 1.57 | 125 | + | Died 2 d. |
| 27 | M | 1.35 | 125 | + | Died 3 d. |
| 39 | F | 1.40 | 125 | + | Died 1 hr. |
| 26 | F | 1.3 | 150 | + | Died 12 hrs. |
| 40 | F | 1.45 | 150 | + | Died 1 hr. |
| 41 | F | 1.37 | 150 | + | Died 25 hrs. |
| 42 | M | 1.84 | 150 | + | Died 6 d. |
| 47 | M | 1.31 | 175 | + | Died 4 hrs. |
| 48 | F | 1.45 | 175 | + | Died 3 hrs. |
| 43 | F | 1.52 | 175 | + | Died 2 d. |
| 44 | M | 1.23 | 175 | + | Died 2 hrs. |

Weight variation, 1.23 to 2.35 kilos.
Average weight, 1.6 kilos.
Variation in amount of fluid injected, 4.8 to 27.6 c. c.

***Remarks.***—Practically all of the animals which received doses of 100 milligrams or more showed an increase of respiration after the injection. Animal No. 43 developed, after about 24 hours, marked edema of the tissues at the base of the injected ear.

TABLE 15.—*Toxicity of arsenobenzol (Lot No. 271, Philadelphia Dermatological Research Laboratory) when given intravenously to rats (tail or leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 24 | M | 300 | 20 | − | Disch. 31 d. |
| 23 | M | 190 | 20 | + | Died 6 d. |
| 2 | M | 285 | 30 | − | Disch. 44 d. |
| 37 | M | 219 | 30 | − | Disch. 31 d. |
| 22 | F | 185 | 30 | − | Died 24 d. |
| 21 | F | 182 | 30 | − | Disch. 39 d. |
| 40 | F | 200 | 40 | − | Disch. 31 d. |
| 3 | M | 280 | 40 | − | Disch. 44 d. |
| 10 | M | 250 | 40 | + | Died 1 min. |
| 20 | F | 160 | 40 | − | Died 17 d. |
| 1 | F | 195 | 50 | − | Disch. 46 d. |
| 6 | F | 280 | 50 | + | Died 15 hrs. |
| 7 | M | 280 | 50 | + | Died 1 min. |
| 19 | F | 160 | 50 | − | Disch. 39 d. |
| 39 | M | 200 | 60 | − | Disch. 31 d. |
| 18 | F | 150 | 60 | − | Disch. 39 d. |
| 17 | F | 130 | 60 | − | Died 18 d. |
| 16 | F | 130 | 60 | − | Disch. 39 d. |
| 4 | F | 183 | 70 | − | Disch. 46 d. |
| 8 | M | 280 | 70 | + | Died 15 hrs. |
| 9 | M | 250 | 70 | + | Died 1 hr. |
| 15 | F | 116 | 70 | − | Disch. 39 d. |
| 26 | M | 242 | 80 | + | Died 18 hrs. |
| 29 | M | 212 | 80 | + | Died 10 min. |
| 30 | M | 202 | 80 | − | Disch. 33 d. |
| 38 | M | 190 | 80 | − | Disch. 31 d. |
| 27 | F | 172 | 90 | + | Died 12 min. |
| 31 | M | 190 | 90 | + | Died 10 min. |
| 32 | M | 185 | 90 | + | Died 3 hrs. |
| 36 | M | 190 | 90 | + | Died 18 hrs. |
| 5 | F | 160 | 100 | − | Disch. 46 d. |
| 11 | M | 245 | 100 | + | Died 15 hrs. |
| 13 | M | 210 | 100 | + | Died 1 min. |
| 34 | M | 157 | 100 | + | Died 18 hrs. |
| 33 | M | 155 | 125 | + | Do. |
| 35 | F | 165 | 125 | + | Died 4 min. |
| 12 | M | 230 | 125 | + | Died 1 min. |
| 14 | F | 210 | 125 | + | Died 6 min. |
| 28 | M | 150 | 150 | + | Died 18 hrs. |
| 25 | M | 180 | 150 | + | Died 3 min. |

Weight variation, 116 to 285 gm.
Average weight, 197 gm.
Variation in amount of fluid injected, 0.38 c. c. to 2.87 c. c.

*Remarks.*—Rats Nos. 1 to 14, inclusive, received the drug through one of the tail veins; all others through one of the veins of the hind leg.

None of the rats showed any very decided organic changes at necropsy except rat No. 22 which died of pulmonary disease.

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TABLE 16.—*Toxicity of arsenobenzol (Lot No. 271, Philadelphia Dermatological Research Laboratory) when given intravenously to guinea pigs (leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 3 | M | 300 | 30 | − | Disch. 46 d. |
| 1 | M | 350 | 30 | − | Disch. 42 d. |
| 24 | M | 320 | 30 | − | Disch. 39 d. |
| 16 | F | 280 | 35 | − | Disch. 42 d. |
| 4 | M | 285 | 50 | − | Disch. 46 d. |
| 2 | M | 310 | 50 | − | Disch. 42 d. |
| 15 | M | 285 | 50 | − | Do. |
| 21 | M | 335 | 50 | − | Disch. 39 d. |
| 22 | M | 330 | 50 | − | Do. |
| 11 | M | 275 | 57 | + | Died 4 d. |
| 26 | M | 320 | 60 | + | Do. |
| 27 | M | 340 | 60 | − | Disch. 37 d. |
| 28 | M | 320 | 60 | − | Do. |
| 29 | M | 325 | 61 | + | Died 15 hrs. |
| 31 | F | 310 | 70 | − | Disch. 31 d. |
| 7 | M | 275 | 70 | + | Died 3 d. |
| 9 | M | 280 | 70 | − | Died 15 d. |
| 5 | M | 300 | 70 | + | Died 20 min. |
| 14 | M | 295 | 70 | − | Disch. 42 d. |
| 17 | M | 275 | 70 | + | Died 4 d. |
| 20 | M | 310 | 70 | + | Died 12 hrs. |
| 23 | M | 330 | 70 | − | Disch. 39 d. |
| 30 | F | 325 | 80 | + | Died 5 d. |
| 6 | M | 275 | 80 | + | Died 4 d. |
| 8 | F | 300 | 80 | + | Died 7 min. |
| 19 | M | 300 | 80 | + | Died 1 min. |
| 33 | F | 320 | 90 | + | Died 4 d. |
| 34 | M | 310 | 90 | + | Died 7 min. |
| 13 | | 295 | 90 | + | Died 6 d. |
| 12 | M | 295 | 90 | + | Died 2 min. |
| 32 | F | 300 | 100 | + | Died 18 min. |
| 10 | M | 275 | 100 | + | Died 1 hr. |
| 25 | M | 340 | 100 | + | Died 25 min. |
| 18 | M | 250 | 104 | + | Died 2 min. |

Weight variation, 250 to 350 gm.
Average weight, 304 gm.
Variation in amount of fluid injected, 0.78 to 3.4 c. c.

*Remarks.*—Nos. 10 and 11 received the drug as a 2 per cent solution.

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TABLE 17.—*Toxicity of arsenobenzol (Lot No. 271, Philadelphia Dermatological Research Laboratory) when given intravenously to guinea pigs (leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 42 | M | 244 | 40 | − | Died 14 d. |
| 44 | F | 240 | 60 | − | Disch. 31 d. |
| 45 | M | 240 | 60 | − | Do. |
| 46 | F | 240 | 60 | + | Died 10 d. |
| 51 | M | 230 | 70 | + | Died 30 min. |
| 52 | F | 234 | 70 | − | Died 23 d. |
| 53 | F | 256 | 70 | − | Disch. 31 d. |
| 54 | M | 234 | 70 | − | Do. |
| 39 | F | 228 | 80 | + | Died 30 min. |
| 40 | F | 228 | 80 | + | Died 4 d. |
| 41 | M | 230 | 80 | + | Died 6 d. |
| 42 | F | 230 | 80 | + | Died 4 d. |
| 47 | F | 228 | 90 | + | Died 30 min. |
| 48 | M | 210 | 90 | + | Do. |
| 49 | M | 220 | 90 | + | Died 11 d. |
| 50 | F | 220 | 90 | + | Died 6 d. |
| 35 | M | 192 | 100 | + | Died 1 min. |
| 36 | F | 180 | 100 | + | Died 7 min. |
| 37 | M | 198 | 100 | + | Died 25 min. |
| 38 | F | 204 | 100 | + | Died 4 d. |

Weight variation, 180 to 244 gm.
Average weight, 223 gm.
Variation in amount of fluid injected, 0.72 to 1.02 c. c.

*Remarks.*—Animal No. 52 probably died of pulmonary disease rather than from the effects of the arsenobenzol.

TABLE 18.—*Toxicity of diarsenol (Lot A 32799-99, Synthetic Drug Co.) when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 54 | F | 1.47 | 60 | + | Died 9 d. |
| 60 | M | 1.82 | 60 | − | Disch. 31 d. |
| 61 | F | 1.78 | 60 | − | Do. |
| 62 | M | 1.69 | 60 | − | Died 18 d. |
| 100 | F | 1.51 | 80 | − | Disch. 33 d. |
| 101 | F | 1.53 | 80 | − | Do. |
| 102 | F | 1.56 | 80 | − | Died 18 d. |
| 103 | F | 1.57 | 80 | − | Died 29 d. |
| 56 | F | 1.55 | 100 | + | Died 4 d. |
| 58 | M | 1.54 | 100 | + | Died 3 d. |
| 59 | F | 1.54 | 100 | + | Died 4 d. |
| 63 | M | 1.67 | 100 | − | Disch. 31 d. |
| 64 | M | 1.29 | 135 | + | Died 4 d. |
| 65 | M | 1.38 | 135 | + | Died 15 hrs. |
| 66 | F | 1.26 | 135 | + | Died 4 d. |
| 67 | F | 1.38 | 135 | + | Died 15 hrs. |
| 52 | F | 1.54 | 175 | + | Do. |
| 53 | M | 1.54 | 175 | + | Do. |
| 55 | F | 1.44 | 175 | + | Died 21 hrs. |
| 57 | F | 1.67 | 175 | + | Died 15 hrs. |

Weight variation, 1.26 to 1.82 kilos.
Average weight, 1.54 kilos.
Variation in the amount of fluid injected, 8.8 to 29.2 c. c.

TABLE 19.—*Toxicity of diarsenol (Lot A 42190–99, Synthetic Drug Co.) when given intravenously to rats (leg vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 70 | F | 149 | 30 | − | Disch. 35 d. |
| 77 | M | 150 | 30 | − | Died 17 d. |
| 66 | M | 180 | 30 | − | Disch. 37 d. |
| 68 | M | 160 | 30 | − | Do. |
| 69 | F | 152 | 30 | − | Do. |
| 67 | M | 154 | 50 | − | Died 24 d. |
| 70 | M | 120 | 50 | − | Disch. 36 d. |
| 72 | M | 122 | 50 | − | Died 18 d. |
| 47 | | 194 | 60 | − | Disch. 31 d. |
| 48 | F | 210 | 60 | − | Disch. 33 d. |
| 50 | M | 184 | 60 | − | Disch. 31 d. |
| 52 | M | 210 | 60 | − | Died 25 d. |
| 63 | M | 152 | 70 | − | Disch. 37 d. |
| 69 | M | 124 | 70 | − | Do. |
| 71 | M | 120 | 70 | + | Died 2 d. |
| 73 | F | 137 | 70 | − | Disch. 35 d. |
| 45 | | 177 | 80 | − | Disch. 31 d. |
| 46 | M | 180 | 80 | + | Died 15 hrs. |
| 49 | F | 180 | 80 | + | Do. |
| 51 | M | 250 | 80 | + | Do. |
| 143 | F | 116 | 80 | − | Disch. 31 d. |
| 144 | M | 154 | 80 | − | Do. |
| 149 | F | 180 | 80 | − | Do. |
| 150 | F | 118 | 80 | − | Do. |
| 56 | M | 240 | 83 | + | Died 1 hour. |
| 145 | M | 118 | 90 | − | Disch. 31 d. |
| 146 | M | 150 | 90 | − | Do. |
| 151 | F | 118 | 90 | − | Died 30 d. |
| 152 | F | 140 | 90 | − | Disch. 31 d. |
| 41 | | 145 | 100 | + | Died 2 d. |
| 42 | | 150 | 100 | − | Disch. 31 d. |
| 43 | F | 170 | 100 | + | Died 15 hrs. |
| 44 | | 170 | 100 | − | Disch. 31 d. |
| 55 | M | 150 | 125 | + | Died 15 hrs. |
| 58 | M | 235 | 125 | + | Do. |
| 60 | F | 115 | 125 | − | Disch. 38 d. |
| 61 | F | 105 | 125 | − | Do. |
| 62 | M | 144 | 125 | + | Died 2 d. |
| 64 | M | 142 | 125 | + | Do. |
| 73 | F | 127 | 125 | + | Died 15 hrs. |
| 74 | F | 117 | 125 | + | Do. |
| 147 | M | 104 | 135 | − | Disch. 31 d. |
| 148 | F | 120 | 135 | − | Do. |
| 153 | M | 130 | 135 | − | Do. |
| 154 | M | 108 | 135 | − | Do. |
| 53 | M | 280 | 150 | + | Died 15 hrs. |
| 54 | M | 220 | 150 | + | Do |
| 7 | M | 160 | 150 | + | Do |
| 59 | M | 138 | 150 | + | Do. |

Weight variation, 104 to 280 gm.
Average weight, 156 gm.
Variation in amount of fluid injected, 0.45 to 4.35 c. c.

TABLE 20.—*Toxicity of diarsenol (B72900–11, Synthetic Drug Co.) when given intravenously to rabbits (ear vein) as a 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 178 | F | 1.5 | 60 | − | Disch. 30 d. |
| 179 | F | 1.5 | 60 | − | Do. |
| 180 | M | 1.45 | 60 | − | Do. |
| 182 | F | 1.65 | 60 | − | Do. |
| 191 | M | 1.4 | 78.7 | + | Died 1 min. |
| 184 | F | 1.4 | 80 | − | Disch. 30 d. |
| 185 | M | 1.4 | 80 | − | Do. |
| 186 | M | 1.6 | 80 | − | Do. |
| 187 | M | 1.5 | 80 | − | Do. |
| 190 | M | 1.45 | 83.1 | + | Died 1 min. |
| 188 | M | 1.7 | 100 | − | Died 15 d. |
| 189 | F | 1.6 | 100 | − | Disch. 30 d. |
| 193 | F | 1.65 | 100 | − | Do. |
| 194 | M | 1.35 | 100 | − | Do. |
| 192 | M | 1.88 | 135 | + | Died 58 hrs. |
| 195 | F | 1.5 | 135 | + | Died 4 d. |
| 197 | F | 1.6 | 135 | + | Died 5 d. |
| 199 | F | 1.7 | 135 | − | Disch. 30 d. |
| 210 | M | 1.4 | 135 | − | Do. |
| 211 | M | 1.45 | 135 | + | Died 4 d. |
| 181 | M | 1.3 | 175 | + | Died 41 hrs. |
| 183 | F | 1.4 | 175 | + | Do. |
| 196 | F | 1.6 | 175 | + | Died 4 d. |
| 198 | M | 1.53 | 178 | + | Do. |

Weight variation, 1.3 to 1.88 kilos.
Average weight, 1.5 kilos.
Variation in amount of fluid injected, 8.7 to 28 c.c.

*Remarks.*—The solution which rabbits Nos. 190, 191 and 192 received was made from the entire contents of a tube of diarsenol. The method of making the above solution differed somewhat from the regular manner, in that the neutralization of the acid solution of diarsenol was effected very rapidly, that is, instead of adding the 15 per cent sodium hydroxide solution drop by drop and shaking after each drop or two, 0.5 c.c. of the alkali were added at one time. This was followed by a second addition of a 0.5 c.c. amount of alkali and the remainder of the alkali which was required to make the solution slightly alkaline was added drop by drop. Inasmuch as Nos. 190 and 191 died immediately after receiving about 80 milligrams per kilo, it appeared that this solution possessed unusual toxicity. Furthermore No. 192, which died after 58 hours from a dose of 135 milligrams per kilogram, manifested toxic symptoms after 100 milligrams per kilo had been given, as shown by a marked increase in respiration. After the entire dose of 135 milligrams per kilo was given the animal was very drowsy. As the results of the experiments with animals Nos. 190 to 192 inclusive were so out of keeping with the rest of the series, and since the only possible difference in the technique employed for these animals was in the method of making the solution, the same technique was employed for making up a new solution which was tested on rabbits Nos. 210 and 211, that is, the alkali was added to the acid solution of diarsenol in two amounts of 0.5 c.c. each and the remainder added drop by drop until the solution became slightly alkaline. The results, however, were not in keeping with those previously obtained; the only symptom which these animals showed was a slight increase in respiration.

TABLE 21.—*Toxicity of diarsenol (B7290-11, Synthetic Drug Co.) when given intravenously to rats (leg vein) as a 2 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M—male; F—female. | Weight in grams. | Dose per kilo. | Result: +dead; —living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 386 | M | 152 | 80 | — | Disch. 32 d. |
| 387 | M | 155 | 80 | — | Do. |
| 388 | M | 116 | 80 | — | Died 25 d. |
| 389 | M | 155 | 80 | — | Disch 32 d |
| 378 | M | 150 | 100 | — | Do. |
| 379 | M | 112 | 100 | — | Do. |
| 380 | M | 142 | 100 | — | Do. |
| 381 | M | 150 | 100 | — | Do. |
| 398 | M | 130 | 115 | + | Died 51 hrs. |
| 399 | M | 110 | 115 | — | Disch. 30 d. |
| 400 | M | 120 | 115 | — | Died 22 d. |
| 401 | M | 122 | 115 | + | Died 22 hrs. |
| 404 | M | 110 | 127 | + | Died 12 min. |
| 382 | M | 140 | 135 | + | Died 20 hrs. |
| 383 | M | 140 | 135 | + | Died 5 hrs. |
| 384 | M | 100 | 135 | + | Died 10 d. |
| 385 | F | 100 | 135 | — | Disch. 32 d. |
| 390 | M | 142 | 135 | + | Died 4 hrs. |
| 391 | M | 140 | 135 | — | Disch. 30 d. |
| 392 | M | 110 | 135 | + | Died 34 hrs. |
| 393 | M | 112 | 135 | + | Died 49 hrs. |
| 394 | M | 130 | 150 | + | Died 22 hrs. |
| 395 | M | 132 | 150 | + | Do. |
| 396 | M | 110 | 150 | + | Died 46 hrs. |
| 397 | M | 110 | 150 | + | Died 7 hrs. |
| 402 | M | 117 | 175 | + | Died 6 hrs. |
| 403 | M | 110 | 175 | + | Died 5 hrs. |
| 405 | M | 110 | 175 | + | Died 4 hrs. |
| 406 | M | 124 | 175 | + | Died 10 hrs. |

Weight variation, 100 to 155 gm.
Average weight, 125 gm.
Variation in amount of fluid injected, 0.47 to 1.08 c. c.

It will be noticed in the epitome of literature relating to salvarsan that the toxicity of the preparations is denoted by the expressions "Dosis tolerata," "Tolerated dose," "M. L. D.," and "Toxic dose." All of these expressions are indefinite. This is largely because the observation period of the various observers differs. For instance the "M. L. D." may refer either to death within a short time after the administration of the drug or to death from chronic poisoning.

For the sake of clearness and to enable a better comparison of the results obtained in the present investigation the following divisions were made of each series of experiments: (1) The minimal dose which kills 75 per cent or more within 24 hours; (2) the minimal dose which kills 75 per cent or more within 2 weeks; (3) the maximal dose which is tolerated by 75 per cent or more for 24 hours; (4) the maximal dose which is tolerated by 75 per cent or more for 2 weeks.

The results of this investigation are grouped in the above four divisions in tables 22, 23, and 24, thus permitting a ready comparison of the toxicity of the preparations examined.

TABLE 22.—*Showing the comparative toxicity of salvarsan (German), salvarsan (Metz Laboratory), arsenobenzol, and diarsenol when given intravenously to rabbits as a 1 per cent alkaline aqueous solution.*[1]

| Preparation | Salvarsan (German). | | Salvarsan (Metz). | Arsenobenzol. | | Diarsenol. | |
|---|---|---|---|---|---|---|---|
| Lot number or date of purchase | 1913 | A28001 (1917). | A2 | 257 | 271 | A32790-99. | B72001-11. |
| Minimal dose which kills 75 per cent or more within 24 hours | 175+ | 175+ | 175 | 175+ | 175+ | 175 | 175+ |
| Minimal dose which kills 75 per cent or more within 2 weeks | [2] 100-175 | 135 | 100 | 100 | [3] 60 | 100 | 135 |
| Maximal dose which is tolerated by 75 per cent or more for 24 hours | 175+ | 175+ | 135 | 175+ | 125 | 100 | 175+ |
| Maximal dose which is tolerated by 75 per cent or more for 2 weeks | 80- | 60 | 60 | 60 | [3] 60 | 80 | 100 |

[1] Doses calculated in milligrams per kilogram of body weight.
[2] Dose probably lies between 100-175 milligrams.
[3] The 80 milligram dose was survived by 75 per cent.

TABLE 23.—*Showing the comparative toxicity of salvarsan (German), salvarsan (Metz Laboratory), arsenobenzol, and diarsenol, when given intravenously to rats as a 1 per cent alkaline aqueous solution.*[1]

| Preparation | Salvarsan (German). | | Salvarsan (Metz). | Arsenobenzol. | | Diarsenol. |
|---|---|---|---|---|---|---|
| Lot number or date of purchase | 1913 | A28001 (1917). | A2 | 257 | 271 | A32790-99. |
| Minimal dose which kills 75 per cent or more within 24 hours | 135 | 135 | [2] 100 | 90 | 90 | 150 |
| Minimal dose which kills 75 per cent or more within 2 weeks | 135 | 135 | [2] 100 | 80 | 90 | [3] 125 |
| Maximal dose which is tolerated by 75 per cent or more for 24 hours | 70 | 100 | 60 | 70 | [4] 60 | 135 |
| Maximal dose which is tolerated by 75 per cent or more for 2 weeks | 70 | 100 | 60 | 70 | [4] 60 | [3] 135 |

[1] Doses calculated in milligrams per kilogram of bodyweight.
[2] The dose of 100 milligrams was regarded as the minimal dose required to kill within 24 hours, or within two weeks, rather than 70 milligrams on account of the fact that the 80 and 90 milligram doses killed less than 75 per cent.
[3] All the animals survived the 135 milligram dose whereas the dose of 125 milligram killed 75 per cent.
[4] The dose of 50 milligrams killed 50 per cent.

TABLE 24.—*Showing the comparative toxicity of salvarsan (German), salvarsan (Metz Laboratory), arsenobenzol, and diarsenol, when given intravenously to rats as a 1 per cent alkaline aqueous solution.*[1]

| Preparation | Salvarsan (German). | Salvarsan (Metz). | Arseno-benzol. | Diarsenol. |
|---|---|---|---|---|
| Lot number or date of purchase | A28001 (1917) | A2 | 257 | B72001-11 |
| Minimal dose which kills 75 per cent or more within 24 hours | [2] 90 | 100 | 135 | 150 |
| Minimal dose which kills 75 per cent or more within 2 weeks | [2] 90 | 70 | 135 | 135 |
| Maximal dose which is tolerated by 75 per cent or more for 24 hours | [2] 80 | 60 | 80 | 135 |
| Maximal dose which is tolerated by 75 per cent or more for 2 weeks | [2] 80 | 60 | 80 | 100 |

[1] Doses calculated in milligrams per kilogram of body weight.
[2] The dose of 70 milligrams killed 75 per cent, whereas the 80-milligram dose killed only 25 per cent.

KEEPING PROPERTIES OF SALVARSAN SOLUTIONS.

The keeping properties of salvarsan solutions were studied, using salvarsan (German, 1917) and arsenobenzol (lot No. 257). One solution of salvarsan (German, 1917) was allowed to stand for from 5 to 6 hours in a glass-stoppered cylinder, the solution only partially filling the cylinder, so that a column of air remained above the fluid. As no precipitate appeared in this solution, it was unnecessary to add sodium hydroxide to clear the solution. A second solution of salvarsan (German, 1917) was examined after it stood for one week in a glass-stoppered cylinder, partially filled. The addition of sodium hydroxide was necessary to clear the solution of the precipitate that had formed. The solution was made alkaline in this way before its administration. In addition arsenobenzol (lot No. 257), which had been kept for one month in a glass stoppered cylinder, partially filled, was examined. This solution was also given as an alkaline solution.

All of the experiments were carried out on rats in the usual manner.

TABLE 25.—*Toxicity of salvarsan, German (1917 sample A28001), after standing 5 to 6 hours under ordinary conditions; given intravenously to rats (leg vein) as a 2 and 1 per cent alkaline aqueous solution.*

| No. of animal. | Sex: M = male, F = female. | Weight in grams. | Dose per kilo. | Result: + dead; − living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *mgm.* | | |
| 434 | M | 110 | 50 | − | Disch. 30 d. |
| 432 | M | 110 | 50 | − | Do. |
| 433 | M | 110 | 50 | − | Do. |
| 431 | M | 104 | 50 | − | Do. |
| 427 | F | 135 | 60 | − | Do. |
| 428 | F | 120 | 60 | − | Do. |
| 426 | M | 114 | 60 | − | Do. |
| 430 | M | 112 | 60 | + | Died 29 hrs. |
| 429 | M | 112 | 80 | − | Disch. 30 d. |
| 424 | M | 100 | 80 | − | Do. |
| 425 | M | 112 | 80 | + | Died 20 hrs. |
| 423 | M | 110 | 80 | − | Disch. 30 d. |

Weight variation, 104 to 135 grams.
Average weight, 115 grams.
Variation in amount of fluid injected, 0.34 to 0.55 c. c.

*Remarks.*—A portion of the above solution was previously used (immediately after making) for the experiments on rats Nos. 411 to 419, inclusive (see Table 7). No discoloration of the fluid had occurred after standing for six hours, so that it was unnecessary to add alkali for the purpose of clearing the solution. Rats Nos. 431 to 434, inclusive, received the drug as a 1 per cent solution six hours after it was prepared; all others as a 2 per cent solution, about five hours after it was made.

It should be stated further that the above solution was kept in a glass-stoppered cylinder, which was only partially filled, so that a column of air remained above the fluid.

TABLE 26.—*Toxicity of salvarsan, German (1917 sample A28001), which was kept under ordinary conditions for one week after being made up as a 1 per cent alkaline aqueous solution. Given intravenously to rats (leg vein) as a 1 per cent solution.*

| No. of animal. | Sex: M—male; F—female. | Weight in grams. | Dose per kilo. | Result: +dead; —living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 206 | M | 112 | 50 | + | Died 10 d. |
| 207 | M | 134 | 50 | — | Died 25 d. |
| 208 | F | 130 | 50 | | Escaped 25 d. |
| 209 | M | 140 | 50 | — | Disch. 31 d. |
| 202 | M | 124 | 60 | + | Died 12 d. |
| 203 | F | 120 | 60 | — | Died 25 d. |
| 204 | F | 112 | 60 | + | Died 3 hrs. |
| 205 | M | 124 | 60 | — | Disch. 31 d. |
| 198 | F | 110 | 70 | + | Died 15 hrs. |
| 199 | F | 118 | 70 | + | Do. |
| 200 | M | 132 | 70 | — | Disch. 32 d. |
| 201 | F | 112 | 70 | — | Died 27 d. |
| 196 | M | 110 | 100 | — | Escaped 25 d. |
| 197 | M | 112 | 100 | + | Died 15 hrs. |

Weight variation, 110 to 140 grams.
Average weight, 121 grams.
Variation in amount of fluid injected, 0.56 to 1.12 c. c.

*Remarks.* This solution became turbid upon standing and to redissolve the precipitate which had formed several drops of 15 per cent NaOH were added before injecting the solution.

TABLE 27.—*Toxicity of arsenobenzol (lot No. 257, Philadelphia Dermatological Research Laboratory) which was kept under ordinary conditions one month after being made up as a 1 per cent alkaline aqueous solution. Given intravenously to rats (leg vein).*

| No. of animal. | Sex: M—male; F—female. | Weight in grams. | Dose per kilo. | Result: +dead; —living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 222 | M | 160 | 50 | — | Disch. 31 d. |
| 223 | M | 158 | 50 | — | Do. |
| 225 | M | 124 | 50 | — | Do. |
| 235 | F | 126 | 50 | — | Do. |
| 234 | F | 114 | 60 | — | Died 22 d. |
| 226 | F | 122 | 60 | — | Disch. 31 d. |
| 227 | F | 120 | 60 | — | Do. |
| 228 | M | 120 | 60 | — | Do. |
| 229 | F | 112 | 80 | + | Died 6 hrs. |
| 230 | F | 112 | 80 | + | Do. |
| 231 | M | 110 | 80 | — | Disch. 31 d. |
| 232 | M | 110 | 80 | + | Died 6 hrs. |
| 233 | M | 102 | 100 | + | Died 1 hr. |
| 234 | F | 102 | 100 | + | Died 3 hrs. |

Weight variation, 102 to 160 grams.
Average weight, 121 grams.
Variation in amount of fluid injected, 0.62 to 1.02 c. c.

*Remarks.*—This solution formed a heavy dark red precipitate upon standing, which was dissolved, before injecting the solution, by the addition of a small amount of 15 per cent NaOH.

It would seem from the above experiments that there was little if any change in the toxicity of these preparations. It can be safely stated that the change in toxicity, if any, after standing for several hours, under the conditions of these experiments was so slight that such a possible factor may be disregarded. The above conclusion, however, applies only to alkaline solutions of salvarsan.

## SUMMARY AND DISCUSSION OF THE RESULTS OF EXPERIMENTS WITH SALVARSAN PREPARATIONS.

On account of the decided variation in the susceptibility of the test animals employed, the only general conclusion which may be drawn from the present experiments is that there is not a marked

variation, if any, in the toxicity of the various preparations of salvarsan examined, and that their toxicity in animals, in a general way, runs parallel with their arsenic content.

However, when we consider the tables more in detail, we find that in Table 22, which gives the summary of the experiments in rabbits, there is a difference of 35 per cent or more in the minimal dose which is required to kill 75 per cent or more of the rabbits within two weeks; also somewhat greater differences in the maximal amounts which are tolerated by 75 per cent or more for the periods of 24 hours and two weeks. It may be concluded further that the 1917 sample of salvarsan (German lot No. A28001) and one sample of diarsenol (lot No. B72900–11) are somewhat less toxic than the other samples examined.

From Table 23, which summarizes the results of the administration of 1 per cent solutions to rats, we may likewise conclude that there is some variation in the toxicity of the various salvarsan preparations. In this group of experiments we again notice that the 1917 sample of salvarsan (German, lot No. A28001) and diarsenol (lot No. A32790–99) are somewhat less toxic than the other samples examined.

From Table 24, which contains the summary of the results of administering the preparations to rats as 2 per cent solutions, we find that diarsenol (lot No. B72900–11) is less toxic than the other samples, and that salvarsan (Metz Laboratory, lot No. A2) is somewhat more toxic than either arsenobenzol (lot No. 257) or diarsenol (lot No. B72900–11).[1]

Individual susceptibility is quite marked in both rabbits and rats. One of the most striking examples of this is to be found in rabbits. In Table 11 it is shown that rabbit 104 survived an intravenous dose of 175 milligrams of arsenobenzol and was discharged at the end of one month; yet 75 per cent of those which received the 100 milligram dose and 50 per cent of those on the 80 milligram dose died within two weeks.

Table 13 shows that there is also considerable individual variation in the susceptibility of rats. All of the rats which were given the 135 milligram dose of arsenobenzol died except one, the rat which was the exception being discharged at the end of one month. Furthermore, 25 per cent of those which received the 60 milligram dose and 50 per cent of those which received the 90 milligram dose died, their deaths occurring in a shorter time than was required for the 135 milligram dose to kill.

The marked individual susceptibility shown above makes it necessary to place more animals than were used in the present

[1] The supply of certain of the samples was limited, and as it was impossible to obtain more material, parallel experiments could not be conducted with all the samples.

investigation on the same dose. In these experiments, as a rule, four or eight animals were placed on the same dose.

While there were no extended observations on the relative susceptibility of pregnant and nonpregnant animals, the impression was gained that pregnant animals were more susceptible than the nonpregnant animals.

Neither rabbits nor rats are entirely satisfactory test animals for determining the toxicity of salvarsan. It would seem, however, that the rat should be given the preference, since it is possible to breed rats under laboratory conditions, and in this way control can be exercised in their selection with reference to such factors as age and weight.

Part of the individual variation in rats may, perhaps, be due to differences in the ages of the animals. To guard against age as a possible factor, in the later experiments rats varying in weight from about 100 to 150 grams were used almost entirely.

By using rats ranging in weight between 100 and 150 grams, and administering the drugs as 2 per cent solutions, the amount of fluid may be limited to about 0.5 to 1 c. c. These amounts may be very conveniently administered to rats or guinea pigs.

In general, it may be said that rabbits tolerate the various salvarsan preparations in intravenous doses of from 60 to 100 milligrams per kilo of body weight for at least two weeks, although we find that certain samples kill in intravenous doses of 60 milligrams per kilo of body weight. Rats tolerate salvarsan preparations in doses of from 60 to 135 milligrams intravenously for a two weeks' period. The results in rats depend somewhat upon whether the drugs are given as 1 or 2 per cent solutions.

The experiments with guinea pigs were confined exclusively to the use of arsenobenzol (lot No. 271). The experiments show that these animals were about as susceptible to this preparation as rats.

It will be noticed that the range between the minimal dose which kills 75 per cent or more within two weeks and the minimal dose which kills 75 per cent or more within 24 hours is very close in rats, whereas it is somewhat wider in rabbits. In other words, salvarsan usually kills rats within a short time; while in rabbits, as a rule, death occurs after a period of several days.

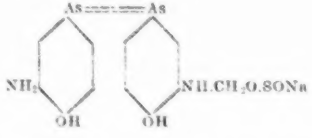
## PART II. NEOSALVARSAN AND NEODIARSENOL.

### INTRODUCTION.

Neosalvarsan,[1] or "914," which was introduced in 1912 by Ehrlich and Bertheim as an improvement over salvarsan, is a condensation product of salvarsan with sodium formaldehyde sulphoxylate.

[1] The Federal Trade Commission on March 4, 1918, adopted the name of neoarsphenamine for neosalvarsan and similar products. See Public Health Reports, 1918, vol. 33, p. 540.

Chemically, it is stated to be sodium 3,3′ diamino 4,4′ dihydroxy-arsenobenzol-methanal sulphoxylate. According to Touton (1912) it has the following structural formula:




In addition to the German product neosalvarsan, the compound now appears under the trade names of neodiarsenol (Canada), neokharsivan (England), nov-arsenobenzol (France), and neo-arsaminol (Japan).

Neosalvarsan is an orange yellow powder which is very unstable in air and readily soluble in water, forming a solution which is neutral to litmus. Aqueous solutions are clear, but if a 0.4 per cent saline solution is used, a turbid solution results. The drug is easily oxidized in aqueous solution, its oxidation being hastened by vigorous shaking, or by heating. Its action is similar to that of salvarsan, but it is less toxic. The therapeutic dose, therefore, is larger than for salvarsan. The main advantage in the use of neo-salvarsan is that it can be more easily and quickly prepared for medicinal use. Up to the present time the only American substitute for the neosalvarsan of German manufacture is that made by the Synthetic Drug Co., of Toronto, Canada, namely, neodiarsenol.

MANNER OF TESTING NEOSALVARSAN.

Neosalvarsan is tested in the same manner as salvarsan before it is placed upon the market. In this investigation neosalvarsan (German) was compared with neodiarsenol (Synthetic Drug Co.) by determining the results of intravenous injections of the drugs in rabbits and rats. The neosalvarsan preparations were administered to rabbits as 2 per cent aqueous solutions, and to rats as 2 and 5 per cent aqueous solutions. A solution never stood for more than three hours before the last injection was given.

TECHNIQUE EMPLOYED.

The technique, the rate of injection, manner of administration, and the method of antisepsis was similar to that employed for salvarsan. Hæmorrhage in rats was more difficult to control than when salvarsan was used, and in many instances ligation of the vessels was necessary.

### SAMPLES OF NEOSALVARSAN EXAMINED.

One sample of neosalvarsan (German) and two samples of neodiarsenol (Synthetic Drug Co.) were examined. The sample of neosalvarsan (German) was obtained in July, 1917, from the American agent of the Farbwerke-Hoechst Co., and bore the lot number A25884, while the samples of neodiarsenol came directly from the Synthetic Drug Co. of Toronto, Canada. Lot number X180–189 was received in June, 1917, while lot number Z5800–11 was received in November, 1917.

### COLOR, REACTION, AND SOLUBILITIES OF THE NEOSALVARSAN PREPARATIONS.

All of the samples which were examined were lemon yellow in color, neutral to litmus, and fully soluble in water at ordinary room temperatures.

### MANNER OF MAKING THE SOLUTIONS OF NEOSALVARSAN.

Sterile glass-distilled water at room temperature was invariably used in making the solutions. After weighing the neosalvarsan it was put into a glass-stoppered cylinder containing a little less sterile glass-distilled water than was required to make the desired concentration and dissolved by shaking gently. It was then brought to the required concentration by the further addition of sterile distilled water.

### LITERATURE RELATING TO THE TOXICITY OF NEOSALVARSAN.

An epitome of the literature relating to the toxicity of neosalvarsan in rabbits is given in Table 28 to facilitate the comparison of the present results with those of previous investigators. No literature on the toxicity of neosalvarsan for rats was available.

TABLE 28.—*Epitome of literature relating to the toxicity of neosalvarsan when given intravenously to rabbits as an aqueous neutral solution.*

| Observer. | Where reported. | Preparation. | Dose per kilo. | Remarks. |
|---|---|---|---|---|
| Castelli | Ztschr. f. Chemotherap. (Orig.) 1912–13, p. 321. | Neosalvarsan (German). | Dosis tolerata 0.3 gm. | Observed 11 days. |
| Kersten | Centralbl. f. Bakt. 1912, vol. 65, p. 369 (orig.). | do | Dosis tolerata 0.2 gm. (average). | Given as a 2 per cent solution; animals observed 6 days. |
| Marschalko | Deutsch. Med. Wchnschr. 1912, vol. 38, p. 1585. | do | Dosis tolerata less than 0.15 gm. | 0.2 gm. dose killed all. 0.15 gm. dose killed 67 per cent. |
| Pearce and Brown. | J. Pharmacol. & Exper. Therap. 1917, vol. 9, p. 354. | do | M. L. D.: 0.150–0.200 gm. | M. L. D. includes death either from acute or chronic poisoning (personal communication). |
| Spiethoff | Med. Klinik, 1914, vol. 10, p. 584. | do | Dosis tolerata 0.15 gm. | Observed that rabbits tolerate more neosalvarsan when dissolved in serum than in water. |

## LENGTH OF TIME ANIMALS WERE UNDER OBSERVATION.

The animals were all under observation for about one month, but for the purpose of this investigation a period of two weeks was chosen as the time limit in the compilation of the following tables. In these tables the minus sign (−) means that the animal has lived for two weeks or longer, while the plus sign (+) means that the animal has died within a two weeks' period.

## ARSENIC CONTENT OF NEOSALVARSAN AND NEODIARSENOL.

The arsenic content of the neosalvarsan and neodiarsenol [1] examined was also determined by the method of Ewins (1916). The following table will show the values obtained:

*Table 29.*

| Name of sample. | Manufacturer's number. | Arsenic content. |
|---|---|---|
| | | *Per cent.* |
| Neosalvarsan (German) | A25884 | 17.6 |
| Neodiarsenol (Synthetic Drug Co.) | X189 | 18.6 |
| Do | Z5811 | 15.9 |

The above table shows that the average arsenic content of the three samples examined is about 17.4 per cent and that the two neodiarsenol samples show a difference in arsenic content of 2.7 per cent.

TABLE 30.—*Toxicity of neosalvarsan, German (lot No. A25884), when given intravenously to rabbits (ear vein) as a 2 per cent aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 174 | M | 1.68 | 60 | − | Disch. 30 d. |
| 175 | M | 1.70 | 60 | + | Died 7 d. |
| 176 | F | 1.47 | 60 | − | Disch. 30 d. |
| 177 | F | 1.45 | 60 | − | Do. |
| 158 | M | 1.60 | 90 | + | Died 5 d. |
| 159 | M | 1.60 | 90 | − | Died 21 d. |
| 160 | M | 1.65 | 90 | − | Disch. 31 d. |
| 163 | F | 1.45 | 90 | − | Do. |
| 161 | M | 1.55 | 135 | − | Do. |
| 162 | F | 1.6 | 135 | + | Died 3 d. |
| 164 | M | 1.75 | 135 | − | Disch. 31 d. |
| 168 | F | 1.6 | 135 | − | Died 19 d. |
| 165 | M | 1.57 | 200 | − | Disch. 31 d. |
| 166 | F | 1.4 | 200 | − | Do. |
| 167 | F | 1.45 | 200 | + | Died 6 d. |
| 169 | F | 1.6 | 200 | − | Died 15 d. |
| 170 | M | 1.6 | 300 | + | Died 5 d. |
| 171 | F | 1.45 | 300 | + | Died 4 d. |
| 172 | M | 1.5 | 300 | + | Died 9 d. |
| 173 | M | 1.51 | 300 | + | Died 4 d. |

Weight variation, 1.4 to 1.75 kilos.
Average weight, 1.56 kilos.
Variation in amount of fluid injected, 4.3 to 24 c. c.
*Remarks.*—Rabbit No. 168 died of pulmonary disease; at necropsy No. 175 showed marked inflammation of the peritoneum and considerable excess of peritoneal fluid; death attributed to peritonitis.

[1] Determination made by Dr. A. S. Seidell, of the Hygienic Laboratory.

TABLE 31.—*Toxicity of neoarsphenamin, German (lot No. A 25884), when given intravenously (leg vein) to rats as a 2 and 5 per cent aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | Mgm. | | |
| 359 | M | 110 | 70 | − | Disch. 30 d. |
| 359 | M | 112 | 80 | − | Do. |
| 360 | M | 117 | 90 | − | Do. |
| 361 | M | 100 | 95 | − | Do. |
| 362 | F | 152 | 80 | − | Do. |
| 378 | M | 111 | 100 | − | Do. |
| 379 | M | 120 | 100 | − | Do. |
| 380 | F | 101 | 100 | + | Died 4 d. |
| 384 | M | 112 | 100 | − | Disch. 30 d. |
| 385 | F | 110 | 110 | − | Do. |
| 370 | F | 132 | 120 | − | Do. |
| 371 | M | 132 | 120 | + | Died 4 d. |
| 372 | F | 115 | 120 | + | Died 20 hrs. |
| 373 | M | 100 | 120 | + | Died 20 min. |
| 367 | M | 102 | 130 | − | Disch. 30 d. |
| 1356 | F | 101 | 175 | − | Do. |
| 1361 | F | 120 | 175 | + | Died 6 d. |
| 1360 | F | 110 | 175 | + | Died 20 hrs. |
| 1365 | M | 102 | 175 | + | Died 2 d. |
| 1366 | F | 140 | 250 | − | Disch. 30 d. |
| 367 | M | 112 | 350 | + | Died 3d. |
| 1368 | M | 100 | 350 | + | Died 5 d. |
| 369 | M | 105 | 350 | + | Died 20 hrs. |
| 374 | M | 112 | 500 | + | Died 14 hrs. |
| 375 | F | 152 | 500 | + | Died 16 hrs. |
| 376 | M | 100 | 500 | + | Died 1 d. |
| 377 | F | 144 | 500 | + | Died 16 hrs. |

Weight variation, 102 to 160 grams.
Average weight, 127 grams.
Variation in amount of fluid injected, 0.4 to 1.5 c. c.

*Remarks:* Rats Nos. 366 to 369, inclusive, and Nos. 374 to 377, inclusive, received the drug as a 5 per cent solution; all others received the 2 per cent solution.

TABLE 32.—*Toxicity of neodiarsenol (lot No. X180–189, Synthetic Drug Co.) when given intravenously to rabbits (ear vein) as a 2 per cent aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | Mgm. | | |
| 125 | F | 1.58 | 90 | − | Disch. 31 d. |
| 127 | F | 1.38 | 90 | − | Do. |
| 128 | M | 1.42 | 90 | − | Do. |
| 129 | M | 1.45 | 90 | − | Do. |
| 126 | F | 1.5 | 135 | + | Died 10 d. |
| 130 | F | 1.37 | 135 | − | Disch. 31 d. |
| 131 | F | 1.39 | 135 | + | Died 6 d. |
| 136 | F | 1.49 | 135 | − | Disch. 31 d. |
| 132 | F | 1.15 | 200 | − | Do. |
| 133 | F | 1.46 | 200 | + | Died 2 d. |
| 134 | F | 1.63 | 200 | + | Died 5 d. |
| 135 | M | 1.48 | 200 | + | Died 1 d. |
| 137 | M | 1.4 | 300 | + | Died 16 hrs. |

Weight variations, 1.15 to 1.63 kilos.
Average weight, 1.44 kilos.
Variation in amount of fluid injected, 6.2 to 21 c. c.

TABLE 33.—*Toxicity of neodiarsenol (Lot No. X180–189, Synthetic Drug Co.) when given intravenously to rats (leg vein) as a 2 per cent aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in grams. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 214 | M | 120 | 80 | − | Disch. 31 d. |
| 215 | M | 120 | 80 | − | Do. |
| 240 | F | 110 | 80 | − | Do. |
| 241 | F | 110 | 80 | − | Do. |
| 216 | F | 134 | 90 | − | Do. |
| 217 | F | 100 | 90 | − | Do. |
| 243 | M | 102 | 90 | − | Do. |
| 242 | M | 104 | 90 | − | Died 20 d. |
| 218 | M | 104 | 100 | − | Disch. 31 d. |
| 219 | F | 110 | 100 | − | Do. |
| 245 | M | 116 | 100 | − | Do. |
| 244 | M | 120 | 100 | − | Died 18 d. |
| 246 | F | 114 | 125 | − | Disch. 31 d. |
| 247 | F | 110 | 125 | − | Do. |
| 220 | M | 110 | 125 | − | Do. |
| 221 | F | 110 | 125 | − | Do. |
| 248 | F | 110 | 150 | − | Died 18 d. |
| 249 | M | 108 | 150 | − | Do. |
| 250 | M | 108 | 150 | + | Died 6 d. |
| 276 | M | 104 | 160 | − | Disch. 31 d. |
| 250 | F | 108 | 175 | − | Died 20 d. |
| 251 | F | 108 | 175 | − | Disch. 31 d. |
| 257 | M | 102 | 175 | − | Do. |
| 253 | M | 100 | 175 | + | Died 5 d. |
| 252 | M | 106 | 200 | + | Do. |
| 254 | M | 105 | 200 | + | Do. |
| 258 | M | 100 | 200 | + | Died 6 d. |
| 259 | M | 96 | 200 | − | Disch. 31 d. |
| 260 | M | 110 | 250 | + | Died 18 hrs. |
| 264 | F | 110 | 250 | + | Do. |
| 265 | F | 110 | 250 | + | Died 3 d. |
| 266 | M | 108 | 250 | + | Died 4 d. |
| 267 | F | 112 | 300 | + | Died 19 hrs. |
| 268 | F | 110 | 300 | + | Died 17 hrs. |
| 269 | F | 110 | 300 | + | Do. |
| 300 | M | 110 | 300 | + | Do. |

Weight variation, 96 to 140 grams.
Average weight, 111 grams.
Variation in amount of fluid injected, 0.44 to 1.68 c. c.

TABLE 34.—*Toxicity of neodiarsenol (Lot No. Z5800–11, Synthetic Drug Co.) when given intravenously to rabbits (ear vein) as a 2 per cent aqueous solution.*

| No. of animal. | Sex: M=male; F=female. | Weight in kilos. | Dose per kilo. | Result: +dead; −living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 200 | F | 1.6 | 60 | + | Died 10 d. |
| 201 | F | 1.6 | 60 | + | Died 3 d. |
| 202 | F | 1.85 | 60 | − | Disch. 30 d. |
| 203 | M | 1.7 | 60 | − | Do. |
| 204 | M | 1.7 | 90 | − | Died 20 d. |
| 205 | F | 1.5 | 90 | + | Died 19 d. |
| 206 | M | 1.5 | 90 | − | Disch. 30 d. |
| 207 | F | 1.55 | 90 | − | Do. |
| 208 | M | 2.00 | 135 | − | Do. |
| 209 | F | 1.7 | 135 | − | Died 24 d. |
| 212 | F | 1.6 | 135 | + | Died 5 d. |
| 213 | F | 1.55 | 135 | − | Disch. 30 d. |
| 214 | M | 1.45 | 200 | − | Died 20 d. |
| 215 | M | 1.55 | 200 | + | Died 5 d. |
| 216 | M | 1.45 | 200 | + | Died 8 d. |
| 217 | F | 1.6 | 200 | + | Died 3 d. |
| 218 | M | 1.5 | 300 | + | Died 2 d. |
| 219 | F | 1.55 | 300 | + | Do. |
| 220 | F | 1.55 | 300 | + | Do. |
| 221 | F | 1.5 | 300 | + | Died 3 d. |

Weight variation, 1.45 to 2.00 kilos.
Average weight, 1.6 kilos.
Variation in amount of fluid injected, 4.8 to 23.2 c. c.

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TABLE 35.—*Toxicity of neodiarsenol (Z5800–11, Synthetic Drug Co.), when given intravenously to rats (leg vein) as a 2 and 5 per cent aqueous solution.*

| No. of animal. | Sex: M—male; F—female. | Weight in grams. | Dose per kilo. | Result: +dead; —living. | Time of death or discharge. |
|---|---|---|---|---|---|
| | | | *Mgm.* | | |
| 483 | F | 120 | 80 | — | Disch. 30 d. |
| 484 | F | 120 | 80 | — | Do. |
| 485 | M | 110 | 80 | — | Do. |
| 486 | M | 110 | 80 | — | Do. |
| 447 | F | 110 | 100 | — | Disch. 31 d. |
| 448 | M | 130 | 100 | — | Do. |
| 449 | M | 110 | 100 | — | Do. |
| 450 | M | 120 | 100 | — | Do. |
| 459 | M | 106 | 120 | — | Disch. 30 d. |
| 460 | M | 103 | 120 | — | Do. |
| 461 | M | 100 | 120 | — | Do. |
| 462 | M | 100 | 120 | — | Do. |
| 468 | M | 100 | 140 | — | Disch. 26 d. |
| 469 | M | 110 | 150 | + | Died 2 d. |
| 470 | M | 110 | 150 | — | Disch. 26 d. |
| 471 | M | 110 | 150 | — | Died 20 d. |
| 451 | F | 104 | 175 | — | Disch. 31 d. |
| 452 | M | 100 | 175 | + | Died 2 d. |
| 453 | M | 106 | 175 | + | Died 4 d. |
| 454 | M | 108 | 175 | + | Do. |
| 455 | F | 104 | 250 | + | Died 16 hrs. |
| 456 | F | 105 | 250 | + | Died 4 d. |
| 457 | M | 110 | 250 | + | Died 14 hrs. |
| 458 | M | 110 | 250 | + | Died 3 d. |

Weight variation, 100 to 130 grams.
Average weight, 109 grams.
Variation in amount of fluid injected, 0.44 to 0.95 c. c.

*Remarks.*—Rats Nos. 455 to 458, inclusive, received a 5 per cent solution; all others a 2 per cent solution.

In Tables 36 and 37 the results of the various series of experiments with the neosalvarsan preparations examined, are placed in parallel in four divisions, similar to the divisions made for the salvarsan preparations.

TABLE 36.—*Showing the comparative toxicity of neosalvarsan (German) and neodiarsenol when given intravenously to rabbits as a 2 per cent aqueous solution.*[1]

| Preparation | Neosalvarsan (German). | Neodiarsenol. | |
|---|---|---|---|
| Manufacturer's No. | A25884. | X180–0. | Z5800–11. |
| Minimal dose which kills 75 per cent or more within 24 hours | 300+ | [2]200+ | 300+ |
| Minimal dose which kills 75 per cent or more within 2 weeks | 300 | 200 | 300 |
| Maximal dose which is tolerated by 75 per cent or more for 24 hours | 300+ | 200+ | 300+ |
| Maximal dose which is tolerated by 75 per cent or more for 2 weeks | 200 | 90 | [3]133 |

[1] Doses calculated in milligrams per kilogram of body weight.
[2] Dose of 300 milligrams given to one animal only; death in 16 hours.
[3] The dose of 60 milligrams killed 50 per cent, whereas the 90-milligram dose killed only 25 per cent of the animals.

TABLE 37.—*Showing the comparative toxicity of neosalvarsan (German) and neodiarsenol when given intravenously to rats as a 2 and 5 per cent aqueous solution.*[1]

| Preparation | Neosalvarsan (German). | Neodiarsenol. | |
|---|---|---|---|
| Manufacturer's No. | A25884 | X180-9 | Z5800-11 |
| Minimal dose which kills 75 per cent or more within 24 hours | 300+ | 300 | 250+ |
| Minimal dose which kills 75 per cent or more within 2 weeks | 120 | 200 | 175 |
| Maximal dose which is tolerated by 75 per cent or more for 24 hours | 250 | 200 | 175 |
| Maximal dose which is tolerated by 75 per cent or more for 2 weeks | 100 | 175 | 150 |

[1] Doses calculated in milligrams per kilogram of body weight.

## SUMMARY AND DISCUSSION OF THE RESULTS OF THE EXPERIMENTS WITH NEOSALVARSAN PREPARATIONS.

The results of the experiments in which the neosalvarsan preparations were used differed, depending upon whether rabbits or rats were employed as test animals. It is seen from Table 36, which relates to the experiments upon rabbits, that neosalvarsan (German) is distinctly less toxic than either sample of neodiarsenol. In this table only the minimal dose which kills 75 per cent or more within two weeks and the maximal dose which is tolerated by 75 per cent or more for two weeks should be considered, on account of the incompleteness of the figures obtained for the other two dosages. We find that in rabbits it requires 50 per cent more neosalvarsan (German) than either sample of neodiarsenol to kill within two weeks; also, that these animals will tolerate about 50 to 100 per cent more neosalvarsan (German) than neodiarsenol, the difference in percentages depending upon which sample of neodiarsenol is made the basis of comparison.

In Table 37, which relates to the toxicity for rats, the toxicity of neosalvarsan (German) when estimated by the minimal dose which kills 75 per cent or more within two weeks, and the maximal dose which is tolerated by 75 per cent or more for two weeks, is from 50 to 75 per cent greater than that of the neodiarsenol preparations examined.

The results, therefore, are inconclusive as regards the relative toxicity of the neosalvarsan preparations examined.

## GENERAL CONCLUSIONS.[1]

1. No marked variation in toxicity was found in either German or American salvarsan, as shown by their intravenous administration to rabbits and rats.

[1] The work reported in this paper was intended only as a preliminary study, leading to a more detailed examination of a larger number of samples. A consideration of some of the questions which this examination has brought up, is now being made in this laboratory. The later work, as yet incomplete, indicates that the toxicity of the preparations may possibly be changed by modifications of technique. 449-37

2. Individual variation in susceptibility to salvarsan is quite marked in both rabbits and rats.

3. The toxicity for rabbits and rats closely parallels the arsenic content of the salvarsan preparations examined.

4. Neosalvarsan preparations were found to be less toxic for rabbits and rats than the salvarsan preparations examined.

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**PLAINTIFF'S EXHIBIT No. 669.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

OFFICE OF THE
CHEMISTRY COMMITTEE
NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE

January 25, 1918

Mr. H. A. Metz,
111 Hudson St.,
New York.

Dear Mr. Metz:

I am much obliged to you for your detailed letter of January 22d in regard to the problem of neo-arsphenamine and sodium arsphenamine. I am glad to note the progress you are making in the output of arsphenamine.

I had an urgent inquiry from Mr. A. H. Johnson of the national headquarters of the American Red Cross, Washington, D. C. for guaiacol carbonate and sulfo guaiacolate of potassium. Since I had heard that you are interested in the former product I sent your address to Mr. Johnson and I hope you have heard from him.

Yours sincerely,
(Sgd.) JULIUS STIEGLITZ.

**PLAINTIFF'S EXHIBIT No. 670.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE
February 19, 1918

Mr. Herman Metz,
122 Hudson St.,
New York, New York.

Dear Mr. Metz:

What is the present situation in regard to your ability to supply procaine to physicians and hospitals? I am issuing a first report on the present situation in synthetic drugs in this week's number of the Journal of the American Medical Association. I hope that you have been able to speed up the manufacture in the interim since December.

Yours sincerely,

(Sgd.) J. STIEGLITZ.

**PLAINTIFF'S EXHIBIT No. 671.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

OFFICE OF THE
CHEMISTRY COMMITTEE
NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE

February 25, 1918

Mr. H. A. Metz,
113 Hudson St.,
New York

Dear Mr. Metz:

I am glad to receive the information concerning the present status of your manufacture of arsphenamine and procaine.

I am suggesting to the Federal Trade Commission that they support your petition to have procaine accepted for transmission by mail. The decision of course will rest with the Commission but they are eminently practical and sensible men and I think that they will see the wisdom of a change in ruling.

Yours sincerely,

(Sgd.) J. STIEGLITZ.

**PLAINTIFF'S EXHIBIT No. 672.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

OFFICE OF THE
CHEMISTRY COMMITTEE
NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE
March 7, 1918

Mr. H. Metz,
111 Hudson St.,
New York, New York.

Dear Mr. Metz:

The sample of novocaine hydrochloride which you were kind enough to send me was received yesterday. Thank you for this evidence that you are turning out the product in condition of purity, I am

Yours sincerely,
(Sgd.) J. STIEGLITZ.

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**PLAINTIFF'S EXHIBIT No. 673.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE
June 1, 1918

Mr. Herman A. Metz,
111 Hudson St.,
New York, New York.

Dear Mr. Metz:

At the request of the Public Health Service we

are beginning here a critical investigation of the preparation of arsphenamine with the idea of trying to find out how to prevent the occurrence of highly toxic preparations incidental to its manufacture. I expect to be in New York next week either Wednesday or Thursday and would ask the privilege of visiting your laboratory again for a close study of the methods that you are using successfully in the manufacture of arsphenamine on a large scale. As I understand it our results will be for the benefit of all manufacturers equally and I should prefer to start from the point reached successfully by you, Dr. Schamberg and others. It will be understood of course that anything which you would like to have kept confidential will be held so. When I reach New York I shall take the liberty of calling you up and shall try to make an appointment for the visit.

I am

Yours sincerely,

(Sgd.) J. STIEGLITZ.

My New York address will
be 60 E. 65th St.,
c/o Dr. L. Stieglitz.

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**PLAINTIFF'S EXHIBIT No. 674.**

TREASURY DEPARTMENT
UNITED STATES
PUBLIC HEALTH SERVICE
WASHINGTON

August 15, 1918

Mr. H. A. Metz
122 Hudson Street
New York City, N. Y.

Dear Mr. Metz:

I have your letter of August 13th referring to

your work on arsphenamine. It will be understood in case any arrangement is made to have one of my chemists work in your laboratory in order to be of assistance to you, that the work will be, of course, only with your consent and that everything done and learned in your laboratory will be held strictly confidential, except for the officers of the Public Health Service. None of the information gained will be used to help the work of the Dermatological Laboratories or any other manufacturer of arsphenamine. Our own results obtained here will, if I find them worth while, no doubt be issued for the information of all interested by the Public Health Service. Dr. Schamberg has not given you any assistance in your emergency and can, of course, expect no assistance from you in regard to any question connected with his product. For instance, his chief difficulty, the solubility of his arsphenamine hydrochloride would be a subject on which it would be quite possible for you to arrange to keep all the facts to yourself and not even make them known to anyone working in your laboratories for us, if we should make the arrangements indicated. I have offered Dr. Schamberg to work here on the problem of solubility, as I think it is one that should be quite easily subject to strictly scientific investigation, especially from the Physical Chemical side.

However, I am glad to say that I have had a most promising report from Dr. McCoy about the quality of your present product, and I want to congratulate you on the success with which you seem to have overcome your older difficulties without any assistance from the Philadelphia concern. I hope that this high quality will be maintained, and I see no reason why that should not be the case, as this is the most difficult season of the year in which to work.

With best regards, I am

JS/C Yours sincerely,

(Sgd.) JULIUS STIEGLITZ.

**PLAINTIFF'S EXHIBIT No. 675.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE

March 27, 1919.

Dr. Herman Metz,
122 Hudson St.,
New York, N. Y.

Dear Dr. Metz:

As you have probably read in the papers, the Government, through the Custodian of Alien Property, has sold all German patents to the Chemical Foundation, Inc. The President of the Foundation is Mr. Garvan, successor of Mr. Palmer as Custodian of Alien Property. The Foundation plans to issue licenses for the manufacture of patented articles on the basis of small royalties which ultimately will be used for advancing research.

It is open to question in what way the sale of the Arsphenamine patents would ultimately effect the present licensees. I am quite certain, however, that the arrangement of the Federal Trade Commission will be recognized by the new Foundation which was organized in a sense by a co-ordinate branch of the Government service. In addition to that I have personally recommended to Mr. Palmer, and through him to Mr. Garvan, that if licenses from the new Foundation are necessary for the manufacture of Arsphenamine and Neo-arsphenamine by present licensees, that the Foundation should issue such licenses to the

present licensees. With this recommendation, the further recommendation was made that continued supervision as to toxicity by the Public Health Service should obtain and also continued control as to the price. These conditions seem to us of vital moment for the public interest in the case of these drugs which are of such vital importance in the combatting of venereal diseases by the Public Health Service.

I have also recommended as being highly desirable, but of less urgent importance, that licenses be not issued for these drugs to a large number of applicants, but be limited to present licensees with possibly two or three further manufacturing firms. The limiting in the number is recommended essentially on the basis of better control of the product.

I do not anticipate any difficulties, but am writing to suggest that you either inquire of Mr. Garvan, Custodian of Alien Property, and President of the Chemical Foundation, what steps, if any, you must take to protect your interests, and to indicate that if a new license is deemed necessary under the laws, you would be glad to be informed of the conditions of such a new license and to be considered as a presumable applicant for a license. You might do this without in any way giving up your present and future rights as a licensee of the Federal Trade Commission.

Yours sincerely,

(Sgd.) JULIUS STIEGLITZ.

**PLAINTIFF'S EXHIBIT No. 676.**

Sub-Committee on Synthetic Drugs
JULIUS STIEGLITZ, CHAIRMAN
University of Chicago

NATIONAL RESEARCH COUNCIL
ACTING AS THE
DEPARTMENT OF SCIENCE AND RESEARCH
OF THE
COUNCIL OF NATIONAL DEFENSE

April 10, 1919.

Mr. Herman Metz,
122 Hudson St.,
New York, N. Y.

Dear Mr. Metz:

I am assured by the Federal Trade Commission that Mr. Garvan of the Chemical Foundation has no intention of disturbing the control which has been exercised over the manufacture and sale of Arsphenamine, and that it has been practically, tho informally, agreed that the rights of the present licensees are to be taken care of. It may be that you will be invited to exchange the licenses from the Federal Trade Commission for licenses from the Chemical Foundation under as favorable terms as the ones you now hold.

Yours sincerely,

(Sgd.) JULIUS STIEGLITZ.

## PLAINTIFF'S EXHIBIT No. 677.

TREASURY DEPARTMENT
UNITED STATES
PUBLIC HEALTH SERVICE

OFFICE OF
FIELD INVESTIGATIONS
RURAL SANITATION

May 2, 1919.

Mr. Herman Metz,
122 Hudson St.,
New York, N. Y.

Dear Mr. Metz:

I received a copy of your circular and special Government price list for Arsphenamine. I am glad to see this reduction in price. This would be the direction to follow to make it unnecessary for Municipal, State, and Federal Public Health Institutions to manufacture Arsphenamine for public use.

I am,
Yours sincerely,
(Sgd.) J. STIEGLITZ.

## PLAINTIFF'S EXHIBIT No. 678.

NATIONAL RESEARCH COUNCIL

Established in 1916 under the Congressional Charter of the National Academy of Sciences and organized with the cooperation of the National Scientific and Technical Societies of the United States.

DIVISION OF CHEMISTRY AND CHEMICAL TECHNOLOGY
COMMITTEE ON SYNTHETIC DRUGS
Julius Stieglitz, Chairman
University of Chicago
Chicago, Ill.
Moses Gomberg
G. W. McCoy
Francis M. Phelps
W. A. Puckner
Edward S. Rogers

1201 Sixteenth Street,
Washington, D. C.

September 25, 1919.

Mr. H. A. Metz,
122 Hudson Street,
New York City.

Dear Mr. Metz:

On my return to Chicago I find your note of September 15. I had some telegraphic correspondence with Dr. Glattfeld in regard to the examination of

suprarenin. It appeared that he was just about to leave on his vacation and he wired me that an examination of the drug would involve a serious change in his plans. As he has been a sufferer for some months I thought it would not be right to ask him to consider postponing his leaving, and I asked him to turn the sample over to another research man. I have heard nothing further of it but Dr. Glattfeld will be back by Monday, the 29th, and I will ask him to have the examination pushed then under his personal supervision.

Mr. Julius Kahn, who was my assistant, is now connected with the Mallinckrodt Chemical Company working on the manufacture of arsphenamine. The method he is using is one that has not been used by either your laboratories or Dr. Schamberg's laboratory. It is shorter than either of the processes mentioned. It is self-understood, further, that anything characteristic about your process of manufacture has not been imparted to any other firm and not to my assistants. We followed out here simply the patented processes in order to understand them and to improve them if possible and have given all firms freely the benefit of our findings. Among other things you will recall we advised you strongly to give up the longer oxalyl process, which we found the less desirable from the point of view of our experiments.

It will interest you to know also that from still another firm I have received the details of method which is quite unique. Of course under the pledge of confidence none of the details of his process or of any other process seen can be communicated to any other manufacturer.

I am making this explanation because your note seemed to imply that you feared that Mr. Kahn might divulge to Mallinckrodt trade secrets in connection with your own processes, but such is not the case.

Yours sincerely,

(Sgd.) JULIUS STIEGLITZ.

## PLAINTIFF'S EXHIBIT No. 679.

TREASURY DEPARTMENT
UNITED STATES
PUBLIC HEALTH SERVICE
WASHINGTON

June 27, 1918.

Mr. Herman Metz,
Farbewerke-Hoechst Co.,
111-113 Hudson Street,
New York City.

Dear Mr. Metz:

In order to advance our studies on arsphenamine as rapidly as possible, it has been considered desirable to send one of our chemists to your establishment for the purpose of securing material, particularly intermediate and by-products, for toxicological study. We would like you, if practicable, to give him the privilege of working in your laboratory, following the manufacturing process through.

Doctor Myers understands thoroughly that any information he might secure is to be considered confidential and used only for the furtherance of our own studies on the subject.

Commending Doctor Myers to your kindly consideration, I remain

Sincerely yours,
(Sgd.) G. W. McCOY,
*Director.*

GB

## PLAINTIFF'S EXHIBIT No. 680.

[Note: Exhibit stricken out.]

## PLAINTIFF'S EXHIBIT No. 680.

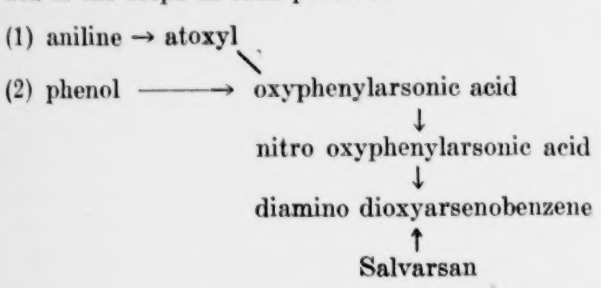
DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY,
Washington, D. C.

REPORT OF SOME EXPERIMENTS ON A METHOD FOR SYNTHESIZING SALVARSAN.

DR. GIBBS:

On June 25, 1917, the writer undertook to continue the work of Dr. R. R. Williams on the synthesis of Salvarsan which he had been obliged to discontinue because of a press of work. Dr. Williams had performed a few experiments in an attempt to prepare para oxyphenylarsonic acid from phenol. His results were not encouraging. It appeared that this reaction, if it were to be employed, would have to be carefully studied.

A survey of the patent and scientific literature dealing with Salvarsan showed that there were two possible starting points—aniline or phenol. The first method involves five steps and appears to be the most generally favored; the phenol procedure involves only four steps. The following diagram shows the relation of the steps in each process:




Since the use of phenol as a starting point saves one step, it was thought worth while to spend some

time in an investigation of this procedure. The results of that study, which occupied the greater part of two months, are reported in an appended statement in such form as to be available for publication if desired. This work, while only preliminary, showed that it was entirely feasible to synthesize oxyphenylarsonic acid in this way with yields superior to those supposed to be obtained by using the longer process starting with aniline.

The nitration of the oxyphenylarsonic acid or, to be exact, its sodium salt, apparently proceeded without difficulty when the patent specifications were followed. The purity of the product, however, was dependent on the purity of the sodium salt of the oxyphenylarsonic acid, as pointed out in the appended report.

The last two steps in the process of manufacture of Salvarsan were only briefly experimented with. The patent specifications were followed exactly and the expected products were obtained in apparently pure condition when pure nitro oxyphenylarsonic acid was employed as the starting point. Impurities of dinitro acid caused the final product to turn rapidly brown on exposure to air and even the use of indifferent gases like $H_2$ and $CO_2$ did not wholly alleviate this trouble. Only one run was made with the purest nitro compound but from this the diaminodioxyarsenobenzene was obtained as a fine yellow powder which did not change color on short exposure to the air or on washing with water. The dihydrochloride of this base was a yellow powder and after drying in nitrogen for some days appeared to be identical in color and form with the German product or that manufactured in Philadelphia. The yield was not entirely satisfactory, being only about 53 per cent. for the total of two steps, or an average of about 73 per cent. for each step; one should probably obtain a total of 65 per cent.

Thus, a small amount of Salvarsan has been syn-

thesized several times in this laboratory and in the final case a very excellent looking product was obtained. There is every reason to suppose that better yields and as good or better product could be obtained in relatively large amounts if more study were put on the reduction step and the formation of the dihydrochloride. The work was, however, discontinued at this point as an investigation of the work of the Dermatological Laboratories showed that further work would be a needless duplication.

While from a chemical point of view the results of this preliminary research appear to be very encouraging it is only fair to state that the final product was never tested biologically. Small amounts of impurities in Salvarsan cause it to be extremely toxic. In the manufacture of it for clinical use, a biological control must be kept of the product. This side of the problem, perhaps the most difficult, would have been next considered if the work had been continued. It is problematical how much experimentation would have been necessary in order to produce a substance entirely satisfactory from a physiological standpoint.

On August 21, 1917, a vist to the Dermatological Research Laboratories and a conversation with Dr. Raiziss convinced the writer that no further work on Salvarsan was necessary. The Philadelphia laboratories were producing a sufficient amount of Salvarsan to meet the needs of the United States if the patent situation could be arranged and an adequate supply of sodium hydrosulphite could be obtained. Dr. Raiziss' process is the result of three years' study and his product is apparently, in some respects, superior to the German. The toxicity and therapeutic power of this preparation had, moreover, been extremely carefully studied and the method of manufacture standardized so as to always yield a substance best suited for clinical purposes. Dr. Raiziss expressed his desire

to co-operate with the government. He was also desirous of obtaining a supply of sodium hydrosulphite from England or of starting some work with the hopes of synthesizing it in this country.

It is interesting to note that in the process used by Dr. Raiziss he employs aniline, not phenol, as his starting point. His method is thus one step longer than that used in this laboratory. The yield of oxyphenylarsonic acid was about 7 per cent. of the theoretical, calculated from the aniline and arsenic acid—contrasted with a 20 per cent. yield obtained from phenol in this laboratory. This comparison, however, is between a semi-technical process and a laboratory experiment and is thus somewhat uncertain.

The results of the experiments started June 25, 1917, and ending August 22, 1917, may be summarized as follows:

(1) The preparation of the sodium salt of oxyphenylarsonic acid from phenol and arsenic acid has been carefully studied. The optimum conditions for carrying out this reaction have been found. A new procedure has been evolved for isolating the product of the reaction in the form of its crystalline sodium salt. The yield is slightly greater than 20 per cent. of the theoretical.

(2) The nitration of the sodium salt has been investigated and the best conditions for obtaining a pure product has been noted.

(3) By following the patent specifications for the last three steps of the process, Salvarsan has been prepared. The material, while not tested physiologically, was of the right color and gave the appropriate chemical tests.

(4) An investigation of the Dermatological Research Laboratory revealed the fact that an excellent plant is at hand capable of meeting the entire United States' demands for Salvarsan. The co-operation of government officials, as regards both the patent situation and the supply of sodium hydrosulphite, is apparently all that is required to make the Philadelphia product of the greatest value to the country at this time.

Respectfully submitted,

(Sgd.) JAMES B. CONANT.

Attached:

Report of Work on Salvarsan.

# THE PREPARATION OF SODIUM OXYPHENYL-ARSONATE.

By James B. Conant.

The importance of the aromatic arsonic acids is every day becoming more evident. Many of them have been found to be useful drugs. Their preparation is a necessary step in the synthesis of many other aromatic arsenic compounds which have the most valuable therapeutic properties, for example, the widely used "Salvarsan." The reaction by which the arylarsonic acids may be prepared are, thus, of considerable practical interest. About seven different methods have been employed with more or less success depending largely on the particular compound desired. Of these methods the most direct is the replacement of hydrogen by the arsonic acid group, a reaction which takes place when certain aromatic substances (phenols and amines) are heated with arsenic acid. Very little has been publish concerning this reaction, the only reference to the arsonation of phenols being a German patent. Because of this paucity of information about a rather important reaction it is perhaps worth while to record some preliminary experiments which were performed with phenol and arsenic acid.

This work was done in connection with a series of experiments undertaken for the purpose of studying the complete synthesis of Salvarsan from phenol and arsenic acid. Consequently it was particularly necessary to obtain the product of the reaction—para oxyphenylarsonic acid—in a form most suitable for carrying out the next step. This next stage is the preparation of nitro oxyphenylarsonic acid by nitration at low temperature with the equivalent amount of nitric acid. The procedure finally adopted involved the

separation of the oxy acid as the sodium salt, contaminated with some sodium sulfate. This mixture was, however, well adapted for nitration and yielded the desired nitro oxy acid in a pure condition. It was necessary to know what portion of the crystalline material was the sodium salt of the organic acid, in order to determine the amounts of nitric and sulphuric acids used in the nitration. A method of analysis was evolved which was very rapid and gave sufficiently accurate results for this purpose.

*The Interaction of Phenol and Arsenic Acid.*

The patent specifications direct that equivalent amounts of phenol and crystalline arsenic acid be heated together for several hours at 150° C. It is further recommended that the reaction be carried out in an apparatus provided with a return condenser and a stirrer. Several difficulties were encountered when these directions were followed. The crystalline arsenic acid (the anhydrous ortho acid) is not appreciably soluble in phenol and it is very hard to prevent the solid from separating as a lump at the bottom of the flask. A great deal of tarry by-product was obtained and the yield of oxyphenylarsonic acid was small.

A number of experiments were performed in an effort to discover more favorable conditions for carrying out the reaction. The solid arsenic acid was discarded and the syrupy acid was employed. The substance as it comes on the market contains about 22% of $H_2O$; by distilling various amounts of water from it, a syrup of varying acid concentration was readily obtained. Besides varying the acid concentration in this way, different temperatures were also tried. Each experiment was continued for about 3 hours and at the end of that time the melt was dissolved in water. The amount of insoluble tarry material could then be roughly estimated and, after following the procedure

described below, the oxyphenylarsonic acid was isolated as its sodium salt.

The results of this work may be summarized as follows: The best form of the acid to employ is a syrup containing an amount of water corresponding to $H_3AsO_4$; this is readily obtained by distilling 22 c.c. of water from 100 g. of the 78% acid. Less concentrated solutions give poorer yields of the final product, while more dehydrated forms of the acid cause the formation of a very large amount of tar. The liquid condition of this acid makes it very easy to obtain a through mixing of the substances during the reaction by the use of a high speed stirrer. The temperature of the reaction should be kept very near 150°; a thermometer immersed in the oil bath should not fall below 147° or rise above 157°. Lower temperatures cause the main reaction to go too slowly, while higher temperatures very quickly cause the whole mass to become a thick tar. When the best conditions are employed only a relatively small amount of water is vaporized during the reaction. It was found convenient to allow this vapor to distill away from the reaction and be condensed in the usual manner. In this way no reflux condenser was necessary. The small amount of phenol carried over by the steam was compensated for by starting with about a 10% excess of this substance. The maximum yield obtained in these experiments was 21.5%; by carefully controlling these conditions, it should always be possible to obtain a yield of at least 20%.

*Isolation of Sodium Oxyphenylarsonate.*

In the first experiments an attempt was made to isolate the oxyphenylarsonic acid in the way described in the patent. In this process the melt is dissolved in water, the aqueous solution is filtered and evaporated to dryness and the residue is extracted with ace-

tone. The acetone solution on evaporating leaves the free acid which may then be recrystallized from glacial acetic acid. Only thick unworkable syrups were obtained by this method. A modification was tried next in which the final syrup (presumably the acid and impurities) was converted into the sodium salt with sodium hydroxide and the sodium salt crystallized from water and alcohol. While a crystalline salt could be readily isolated in this way, tests showed that it is very impure, being contaminated with large amounts of salts of arsenic acid. Besides this difficulty the process seemed needlessly complicated. An entirely different procedure was finally decided upon which is as follows:

The aqueous solution of the melt is filtered from any tarry material. Barium hydroxide is now stirred into the solution until the original brown color begins to show a pink tint. At this point the solution is filtered and extracted several times with ether, this removes a considerable amount of tarry impurity which is rather soluble in both acid and alkalies and can hence be extracted with success only when the acid concentration of the solution is suitable. The color change of this substance acts as an indicator for this point. More barium hydroxide is now added to the aqueous solution until a small portion after being made alkaline and filtered gives a test for barium ions. The entire solution is then made just alkaline to litmus with sodium hydroxide and filtered. The excess of barium is now removed by sodium sulphate and the solution filtered again. On evaporating to a small volume, a thick red syrup is obtained from which the sodium salt begins to crystallize. If the extraction with ether has been successful in eliminating the greater part of the impurities a large part of the sodium oxyphenylarsonate can now be obtained by the addition of alcohol. More or less impurity always escapes the extraction and is

present at this later stage as a sodium salt which is very soluble in water and prevents the crystallization of the other material. This difficulty may be very readily overcome by acidifying the syrup with dilute sulphuric acid until the solution is yellow and the impurities have separated as a thick brown oil. This tarry material can then be readily separated from the solution which on again neutralizing and evaporating completely solidifies. The crystalline solid thus obtained is a mixture of sodium sulphate and sodium oxyphenylarsonate. The sodium sulphate seems to facilitate greatly the crystallization of the products from concentrated solutions. As will be shown later, the presence of sodium sulphate does not interfere with the nitration of the organic molecule. The mixture may be readily crystallized from dilute alcohol. One recrystallization of the mixture containing 33% of sodium sulphate gave a product containing less than 4% of sodium sulphate. The salt when it separates from an aqueous or dilute alcoholic solution crystallizes with varying amounts of water which it readily loses on heating to 80°-100° C.

*Method of Analysis of Mixtures of Sodium Oxyphenylarsonate and Sodium Sulphate.*

The chief objection to working with the sodium salt rather than the free acid is that there is no simple criterion of purity, such as a melting point determination. This objection is particularly significant when the product is known to be contaminated with other substances (as sodium sulphate) and an exact amount must be taken for a subsequent step (as in the nitration). To circumvent this difficulty a method of analysis was devised. The procedure adopted resembles the bromine titration method for phenol determinations. When an aqueous solution of oxyphenylarsonic acid or its salts is treated with an excess of

bromine water a precipitate is at once formed. On adding potassium iodide the excess bromine liberates iodine and any tribromphenol bromide also liberates bromine; the organic substance is thus all present as tribromphenol. The method actually employed was as follows: About a tenth of a gram of the substance dried at 100° C.: was weighed into a small glass stoppered flask and dissolved in a little water. Fifteen cubic centimeters of an approximately normal solution of bromine and potassium bromide was now run in from a burette. The flask was stoppered and shaken iseveral minutes. An excess of potassium odide was now added, the flask shaken again and the solution titrated with—sodium thiosulphate. The bromine solution was compared with the thiosulphate before each determination. This method was rapid and sufficiently accurate for the work at hand; it was checked by an analysis of pure phenol. Several determinations on the same substance usually varied from each other by two or three per cent.

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*Nitration of the Crude Salt.*

The mixture of sodium sulphate and sodium oxyphenylarsonate obtained as the crude product of the process just described can be readily nitrated. From the analysis of the dried mixture the equivalent amount of nitric acid can be readily calculated. This amount of nitric acid is mixed with an equal amount of sulphuric acid and employed in the nitration as described in the literature. The crude salt is dried at 100° C., finely powdered and slowly stirred into sulphuric acid kept at 0° C. The amount of sulphuric acid should be about half the weight of the salt used. The nitrating acids are now slowly introduced into the mixture which is well stirred and kept at 0° C. The tempera-

ture is then allowed to slowly rise to 10° C. and the product diluted with five times its volume of water, the nitro oxyphenylarsonic acid separating out on standing 24 hours.

By this procedure a mixture containing 29 per cent. of sodium sulphate was readily nitrated and pure nitro oxyphenylarsonic acid obtained in a 75 per cent. yield.

*Summary.*

1. The reaction between phenol and arsenic acid has been studied and the optimum condition for the production of oxyphenylarsonic acid determined. A yield of 20 per cent. can be obtained.

2. A method has been devised for isolating the product of this reaction in the form of its crystalline sodium salt contaminated with some sodium sulphate. The tarry material formed in the reaction can be wholly eliminated.

3. A rapid method has been found for analyzing such a mixture of sodium sulphate and sodium oxyphenylarsonate.

4. The sodium oxyphenylarsonate may be readily obtained pure by recrystallizing the crude salt from dilute alcohol.

5. The crude salt may be directly nitrated with the production of nitro oxyphenylarsonic acid in good yields.

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# The Relation between the Mode of Synthesis and Toxicity of Arsphenamine and Related Compounds

By Walter G. Christiansen

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[CONTRIBUTION FROM THE DEPARTMENT OF PHARMACOLOGY, HARVARD MEDICAL SCHOOL.]

# THE RELATION BETWEEN THE MODE OF SYNTHESIS AND TOXICITY OF ARSPHENAMINE AND RELATED COMPOUNDS.[1]

BY WALTER G. CHRISTIANSEN.

Received June 21, 1921.

In the oldest and probably the most widely used method of preparing arsphenamine, 3-nitro-4-hydroxy-phenylarsonic acid is reduced by sodium hydrosulfite directly to arsphenamine base which is then converted into the dihydrochloride by solution in methyl-alcoholic hydrochloric acid and precipitated with ether. This procedure has led to wide variations in the toxicity of the product; some preparations kill at doses as low as 60 mg./kg., whereas others do not kill at 130 or 140 mg./kg. Believing that some

[1] This is the fourth of a series of studies on the properties contributing to the toxicity of arsphenamine being made under a grant from the United States Interdepartmental Social Hygiene Board to the Harvard Medical School; the work is under the general

condition or set of conditions controlled the toxicity, a detailed investigation of the arsphenamine synthesis was undertaken. The toxicity discussed in this paper is that described under Type II in a paper by Dr. Reid Hunt[2] and is quite different from that due to the presence of 3-amino-4-hydroxyphenyl-arsenious oxide or to the physical nature of the solution.

The nitrohydroxy acid is obtainable by three commercially feasible processes,[3] and it was found that relatively toxic and nontoxic arsphenamine could be obtained from crude or purified nitro acid regardless of the method by which the latter was made. Moreover, the replacement of as much as 5% of the nitro acid by substances which might be present as impurities, *e. g.*, 3,5-dinitro-4-hydroxy-phenylarsonic acid, *o*-nitro-*p*-cresolarsonic acid, or a mixture of 3-nitro- and 5-nitro-2-hydroxy-phenylarsonic acids, caused only slight variations in the toxicity of the resulting arsphenamine. In this connection attention should be called to the fact that the presence of the dinitro acid, as an impurity, would lead to the formation of a tri-amino and not a tetra-amino arseno compound as has been suggested. This is a consequence of the formation of an unsymmetrical arseno compound in preference to two symmetrical ones when a mixture of two different arsonic acids is reduced. Previous investigators[4] have mentioned this, and work done in this laboratory is entirely in agreement with that of the others.[5]

Investigation of methods available for the conversion of the base into the dihydrochloride[6] revealed nothing which caused distinct variations in toxicity. In fact, when a sample of the base was converted half into the dihydrochloride by the methyl-alcohol—ether method and half into the dihydrosulfate by precipitation of the latter from a dilute solution of the base in aqueous hydrochloric acid with dil. sulfuric acid the two substances had identical toxicities. In another experiment, the dihydrochloride was dissolved in methyl alcohol and reprecipitated with ether

direction of Dr. Reid Hunt, who is also responsible for the biological tests reported in this paper. Additional aid has been received from the Committee of the Permanent Charity Fund, Incorp.

[2] Hunt, *J. Am. Med. Assoc.*, 76, 854 (1921).

[3] For an outline of these syntheses see Lythgoe, *Chem. Age* (N. Y.), 28, 390 (1920).

[4] Bertheim, *Chem. Ztg.*, 38, 756 (1914); Karrer, *Ber.*, 49, 1648 (1916); Fargher, *J. Chem. Soc.*, 118, 865 (1920).

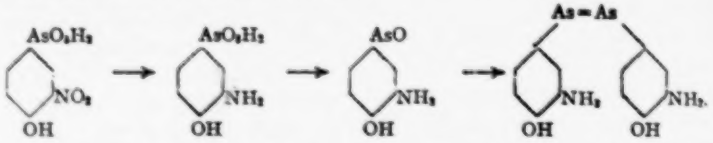
[5] The reduction of equivalent quantities of *p*-hydroxy-phenylarsonic acid and its mononitro or mono-amino derivative gave no acid insoluble arseno compound; the only substance obtained gave a hydrochloride which analyzed for mono-amino-dihydroxy-arsenobenzene hydrochloride. Also, the reduction of equivalent quantities of 3-nitro- or 3-amino-4-methoxy-phenylarsonic acid and 3-amino- or 3,5-dinitro-4-hydroxy-phenylarsonic acid gave no alkali-insoluble arseno compound. These results could be obtained only by the formation of an unsymmetrical molecule.

[6] Ehrlich and Bertheim, *Ber.*, 45, 756 (1912); Kober, THIS JOURNAL, 41, 442 (1919).

without any alteration in toxicity. Another portion was converted into the base by treating an aqueous solution with sodium carbonate and the toxicity of the base was equivalent to that of the original hydrochloride.

These results indicate that the toxicity of the arsphenamine is determined during the reduction of the nitrohydroxy acid to arsphenamine base and is not dependent upon the character or source of the nitro compound or upon the conversion of the base into the dihydrochloride.

Examination of the reaction by which arsphenamine base is obtained shows the presence of several known intermediates and the opportunities for undesired side reactions to occur.




At this point in the work the average tolerated dose of a large number of preparations made from the nitro compound by the standard method of reduction was 110 mg./kg.[7] and varied between 70 and 140 mg./kg. When the pure amino acid, from various sources, was reduced under the same set of conditions the arsphenamine consistently had a tolerated dose of 140–150 mg./kg. This figure agrees well with those obtained for arsphenamine prepared from the pure amino acid by other methods[8] and is probably as high as can be attained with any degree of regularity. Hydrosulfite reduction of the pure arsenious oxide gave a product tolerated in doses of approximately 130 mg./kg. It is evident from the wide variations encountered when the nitro acid is the starting material, from the consistency with which an excellent product may be secured by reducing the amino acid by the same method used for the nitro acid, and from the fact that the mechanism of the reaction is the same in both cases after the nitro group has been reduced, that the toxicity of the arsphenamine obtained by hydrosulfite reduction depends upon some variable process in the formation of the amino group. Later, when methods had been developed for the consistent production, from the nitro acid, of arsphenamine with a tolerated dose as low as 50–70 mg./kg., the application of these methods to the reduction of the pure amino acid gave a product with a tolerated dose of approximately 140 mg./kg.

That the toxicity of arsphenamine should be closely bound up with the reduction of the nitro group is not surprising when one considers the many intermediates and by-products encountered in the reduction of nitro compounds. When the quantities of reagents used in this reduction were

[7] The average tolerated dose of the arsphenamine of 6 manufacturers was found by Schamberg, Kolmer, and Raiziss, *Am. J. Med. Sci.*, **160**, 188 (1920), to be 105 mg./kg.

[8] Christiansen, THIS JOURNAL, **42**, 2402 (1920); **43**, 370 (1921).

varied no alterations were found in the toxicity of the resulting arsphenamine, but as soon as variations were made in the conditions under which the reaction took place marked variations in toxicity were obtained. Ultimately it was determined that the important factors are the degree to which high local concentrations of the nitro compound momentarily exist at the start of the reduction, the temperature at which the nitro group is reduced, and the speed at which the solution, after the reduction of the nitro group, is raised to 55°. When this point in the reaction is reached, the toxicity of the arsphenamine which will be produced has been settled. The procedure best suited for the development of low toxicity is very vigorous mechanical stirring while a cold solution of the nitro compound is slowly added to a cold solution of magnesium chloride and sodium hydrosulfite followed by rapid heating to 55°. Obviously the reverse conditions tend to develop high toxicity. That the degree of agitation affects the toxicity only at the time of reduction of the nitro group is shown by the fact that as soon as the color of the nitro group has been destroyed the rate of stirring can be increased to that used for the preparation of arsphenamine of low toxicity without decreasing the toxicity of the material.

The influence of each of these conditions is shown in the following table. When nothing is specified it indicates that the importance of the condition had not been discovered and was only approximately constant in successive experiments. All experiments recorded here were conducted identically after 55° had been reached.

TABLE I.

INFLUENCE OF CONDITIONS OF PREPARATION UPON TOXICITY.

| Rate of stirring. | Rate of addition of nitro solution. | Temp. of solutions. | Rate of heating. | Expt. | Average tol. dose. | Limit of tol. dose. | Average as content. |
|---|---|---|---|---|---|---|---|
| | | °C. | | | Mg./kg. | Mg./kg. | %. |
| R[a] | .. | .. | .. | 10 | 110 | 100–120 | 30.27 |
| S[b] | .. | .. | .. | 3 | 73 | 50–100 | 30.25 |
| R | S | .. | .. | 6 | 115 | 100–130 | 30.99 |
| S | R | .. | .. | 6 | 73 | 60–100 | 30.60 |
| R | S | 10 | .. | 9 | 118 | 110–130[c] | 30.96 |
| S | R | 30 | .. | 9 | 79 | 60–90[c] | 29.82 |
| R | S | 10 | R | 5 | 134 | 130–150[d] | 31.15 |
| S | R | 30 | S | 2 | 55 | 50–60[d] | 29.83 |

[a] R = Rapid.

[b] S = Slow.

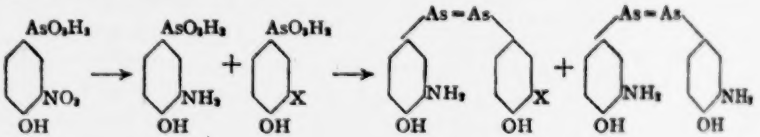
[c] This series includes preparations made: (a) from crude and recrystallized nitro acid made from phenol; (b) from recrystallized nitro acid made from aniline by the oxalyl method; (c) with different commercial brands of hydrosulfite; (d) by different methods of conversion of the base into the dihydrochloride.

[d] This series includes preparations made from crude nitro acid made from phenol and from aniline by the oxalyl method.

Since it has been established that the crucial part of the synthesis lies in the reduction of the nitro group, preliminary work has been done toward ascertaining what undesired secondary process takes place during this reaction. The nitro acid was reduced with hydrosulfite between $-10°$ and 0, in order to slow down this very exothermic reaction and produce conditions similar to prolonged high local concentrations of the nitro compound in the presence of hydrosulfite. The crude amino acid, after isolation, was further reduced with hydrosulfite and yielded arsphenamine tolerated in doses of 120–130 mg./kg. However, when a small quantity of pure amino acid was added to the mother liquor from the crude amino acid separated above and the solution reduced with hydrosulfite, the arsphenamine obtained had a tolerated dose of about 53 mg./kg.; this is the average of 11 experiments in which the tolerated dose varied from 30 to 70. It is evident that the secondary reduction product remains for the most part in the solution when the crude amino acid is isolated. The small quantity of pure amino acid was added to the mother liquor in order that the secondary reduction product may unite, upon reduction, with a molecule of pure amino acid to form the unsymmetrical arseno compound since this is what must happen in the formation of arsphenamine where the ratio of the amino acid to the secondary product is large.

A number of experiments have been made with this solution apparently containing the secondary reduction product and work is now in progress toward the determination of the nature of this product.

The following explanation for the variations found in the toxicity of arsphenamine is suggested.




(I). (II). (III).

The toxicity of arsphenamine depends upon the quantity of (III) present, which in turn depends upon the amount of (II) formed at the beginning of the reaction and this is very variable. By regulation of the conditions as discussed above the formation of (II) can be accelerated or retarded but apparently not always entirely inhibited because the average of the best preparations from the nitro acid is below that of preparations from the amino acid. The success of the arsphenamine synthesis is due to the fact that (I) is the major and (II) the minor reduction product.

In order to verify this explanation and to see whether it could be applied to substances related to arsphenamine, mono-, tri-, and tetra- amino dihydroxy-arsenobenzenes were prepared from the nitro and amino acids.

In each case the products prepared by reduction of the amino aryl arsonic acids were less toxic than those prepared from the analogous nitro acids. Interesting biological observations on the effect of increasing the number of amino groups in the hydroxy-arsenobenzene have been made by Drs. Reid Hunt and G. P. Grabfield.[9]

In general the amino arseno compounds vary in toxicity according to the methods of preparation and are obtained in the purest form by reduction of amino arsonic acids. When the nitro acids serve as the starting material more toxic products result owing to the formation of secondary reduction products during the reduction of the nitro group.

The toxicity determinations were made by intravenous injection into white rats and the arsenic determinations by a modification of Lehmann's method.

Fargher and Pyman,[10] in a paper on the "Composition of Salvarsan," showed that arsphenamine contains two molecules of water of crystallization and small variable amounts of occluded methyl alcohol In this laboratory 4 carefully prepared samples of arsphenamine base were found to contain the following percentages of arsenic: 37.33, 38.68, 37.78, 38.96; and one sample prepared by precipitation of an aqueous solution of the dihydrochloride with sodium carbonate contained 37.39%. The calculated percentage for $C_{12}H_{13}O_2N_2As_2$ is 40.98; for 1 $H_2O$, 39.06; for 2 $H_2O$, 37.32. Apparently water in variable amounts is firmly attached to the base when the latter forms and is not lost during the drying at room temperature or conversion into the dihydrochloride. If some phenomenon like this did not occur it would be hard to understand how a seemingly dry product when dissolved in anhydrous alcoholic solutions and precipitated with ether could obtain water of crystallization.

In the cases reported in this paper of compounds very closely related to arsphenamine the calculated and actual arsenic contents agree well if it is assumed that these substances also have 2 molecules of water of crystallization.

## Experimental.

### Reduction of 3-Nitro-4-hydroxy-phenylarsonic Acid to Arsphenamine.

A. To a solution of 5.3 g. of magnesium chloride hexahydrate in 130 cc. of water at 8°, 30 g. of sodium hydrosulfite is added and a cold (8°) solution of 2 g. of the nitro acid in 46 cc. of water containing 0.66 g. of sodium hydroxide is added gradually during 1–1.5 min. with very vigorous mechanical stirring. One g. of Superfiltchar[11] is added and the mixture is heated to 40° as rapidly as possible and then filtered.[12] The

[9] These observations will be published in a later paper.

[10] Fargher and Pyman, *J. Chem. Soc.*, 117, 370 (1920).

[11] A high grade of vegetable decolorizing carbon, a supply of which was placed at our disposal by the Industrial Chemical Co., N. Y.

[12] Filtering at this point as suggested by Kober, Ref. 6, is of great assistance since it renders the subsequent conversion of the base into the hydrochloride much easier. The carbon helps to remove the more finely divided insoluble matter which often tends to pass through the filter but does not seem to have any bearing upon the toxicity of the arsphenamine.

clear colorless filtrate is rapidly heated with stirring to 55° and maintained at 55–60° for 90 minutes. The base is removed by filtration and, after washing and drying *in vacuo* over caustic soda, is converted into the dihydrochloride by dissolving in 7.5 cc., of absolute methyl alcohol containing the calculated amount of dry hydrogen chloride filtering and pouring into 10 volumes of ether[13] cooled to 0–5°. The precipitate is washed with ether and dried *in vacuo* over caustic soda. Yield, 1.2 g. of yellow powder easily soluble in water. Five experiments gave a product which had an average tolerated dose of 130 mg./kg. and arsenic content of 31.15%; that calculated for $C_{12}H_{14}O_2N_2Cl_2As_2$. $2H_2O$ is 31.58%.

**B.** The quantities are the same as in **A.**, but the solutions are brought to 30° before mixing, the stirring is very slow when the hydrosulfite and nitro solution are added, and the latter is added in 5 seconds. As soon as the color due to the nitro group disappears the rate of stirring is increased to that used in A and as soon as the hydrosulfite has completely dissolved the material is filtered.[14] The filtrate is heated to 55° during 40 minutes with vigorous stirring and maintained at 55–60° for 1.5 hours. The remaining part of the experiment is like A. The product of 2 experiments gave an average tolerated dose of 55 mg./kg., and arsenic content of 29.82%.

### Reduction of 3-Amino-4-hydroxy-phenylarsonic Acid.

In this process there is no particular need of careful attention to the details at the beginning as no reaction occurs until the solution has become hot.

To a solution of 5.3 g. of magnesium chloride hexahydrate in 130 cc. of water, 25 g. of sodium hydrosulfite is added with stirring and then a solution of 1.8 g. of the pure amino acid in 40 cc. of water and 5 cc. of saturated sodium carbonate[15] solution. The solution is heated to 30°, filtered, and the experiment is completed as in the other cases. Yield, 1.46 g. of yellow powder easily soluble in water. Four experiments gave a product having an average tolerated dose of 140–150 mg./kg. and arsenic content of 31.55%.

### Reduction of the Nitro Acid to the Amino Acid.

A solution of 2 g. of the nitro-hydroxy-phenylarsonic acid in 15 cc. of water and 1.5 cc. of sodium hydroxide (sp. gr. 1.295) is cooled in a freezing mixture (−16°) with rapid stirring. At about −2° the sodium salt of the nitro acid separates as fine crystals, with the evolution of heat. When the mush is at about −3°, 5 g. of hydrosulfite is added, the heat generated is partly absorbed as the nitro compound redissolves and if the freezing mixture is efficient the temperature can be kept below 0°. After the color of the nitro group has disappeared the temperature falls to −10°, and the amino acid starts to separate. At the end of ½ hour 0.6 cc. of glacial acetic acid is added and the material is left in the ice box for 1 hour. After filtration, washing, and air-drying, 1.2 g. of the crude amino acid is obtained.

The mother liquor is treated with 1.5 cc. of sodium hydroxide, and a solution of 0.5 g. of pure amino acid in 10 cc. of water and 1.5 cc. of saturated sodium carbonate solution is added. This solution is added to one of 2.6 g. of magnesium chloride hexahydrate in 20 cc. of water to which 11 g. of hydrosulfite has been added. The reduction and conversion of the base into the dihydrochloride is carried out as in the case of the pure amino acid. The average of the products from 9 experiments is 0.2 g. of brownish-yellow powder which dissolves very readily in water and is tolerated in doses of 53 mg./kg.

[13] Absolute ether is unnecessary.

[14] Carbon is not necessary as the fine particles coagulate rapidly at this temperature and are easily filtered out.

[15] Sodium carbonate is used in place of hydroxide as the aminohydroxy acid oxidizes much less rapidly in the carbonate solution.

Reduction of the crude amino acid by the method used for the pure acid gives 1.3 g. of arsphenamine with a tolerated dose of 120 mg./kg. or above and an arsenic content of 31.05%.

**3-Amino-4,4'-dihydroxy-arsenobenzene Hydrochloride.**

I. A mixture of 0.9 g. of anhydrous monosodium *p*-hydroxy-phenylarsonate and 0.9 g. of 3-amino-4-hydroxy-phenylarsonic acid is reduced by the method used in preparing arsphenamine from the amino acid. One and one-tenth g. of base is obtained which is completely soluble in acids. When a filtered methyl-alcoholic solution of the hydrochloride is poured into ether an oily substance separates which after decantation of the ether is dissolved in water and precipitated by pouring into 1:1 hydrochloric acid. After filtering, washing with acid and drying *in vacuo* over caustic soda, 0.7 g. of reddish-orange powder is secured which is soluble in water and is tolerated in doses above 130 mg./kg.

*Analysis.* Calc. for $C_{12}H_{12}O_2NClAs_2.2H_2O$: As, 35.43. Found: 35.39.

II. A mixture of 0.9 g. of monosodium *p*-hydroxy-phenylarsonate and 1 g. of 3-nitro-4-hydroxy-phenylarsonic acid is reduced by Method A used to prepare arsphenamine from the nitro acid but without using carbon, without particularly rapid heating to 55°, and filtering at 30° instead of 40°.[16] One g. of tan colored base is obtained. By dissolving it in 30 cc. of water and 0.3 cc. hydrochloric acid (sp. gr. 1.19) and pouring the filtered and cooled solution into 60 cc. of cold 1:1 hydrochloric acid the hydrochloride is precipitated. Continuing as in Procedure I one obtains 0.9 g. of reddish-orange solid, the tolerated dose of which is 120 mg./kg., and whose arsenic content is 36.12%.

III. The mixture of nitrohydroxy and hydroxy acids is reduced by Method B for the preparation of arsphenamine from the nitro acid but the filtered solution is not heated particularly slowly to 55°. The hydrochloride is obtained as above. Yield: 0.8 g. of reddish-orange solid which is tolerated in doses of 80 mg./kg. and has an arsenic content of 35.98%.

In each of the following experiments the arseno base is converted into the hydrochloride by the methyl alcohol-ether method used for arsphenamine.

**3,5,3'-Tri-amino-4,4'-dihydroxy-arsenobenzene Trihydrochloride.**

I. A mixture of 0.9 g. of 3-amino-4-hydroxy-phenylarsonic acid and 0.95 g. of 3,5-diamino-4-hydroxy-phenylarsonic acid is reduced by the method used to reduce the mono-amino acid to arsphenamine. Yield, 1.5 g. of yellow powder which is very readily soluble in water and is tolerated in doses of 80 mg./kg.

*Analysis.* Calc. for $C_{12}H_{16}O_2N_3Cl_3As_2.2H_2O$: As, 28.49. Found: 28.68.

II. A mixture of 1 g. of 3-nitro-4-hydroxy-phenylarsonic acid and 1.17 g. of 3,5-dinitro-4-hydroxy-phenylarsonic acid is reduced as in Preparation II of the mono-amino dihydroxy-arsenobenzene. Yield, 1.2 g. having a tolerated dose of 80 mg./kg. and an arsenic content of 28.23%.

III. The above mixture of mono- and dinitro acids is reduced as in Preparation III of the mono-amino-dihydroxy-arsenobenzene. Yield, 1.15 g.; tolerated dose, 60 mg./kg.; arsenic content, 28.70%.

**3,3',5,5'-Tetra-amino-4,4'-dihydroxy-arsenobenzene Tetrahydrochloride.**

In the following experiments only that portion of the base soluble in methyl alcoholic hydrochloric acid[17] was used.

[16] This work was done before the influence of the rate of heating had been investigated.

[17] Raiziss and Gavron, THIS JOURNAL, 43, 582 (1921).

**I.** One and nine-tenths g. of 3,5-diamino-4-hydroxy-phenylarsonic acid is reduced by the method used in reducing the mono-amino acid to arsphenamine. Yield, 0.6 g. yellow powder which is very easily soluble in water and which is tolerated in doses of 70 mg./kg.

*Analysis.* Calc. for $C_{12}H_{18}O_2N_4Cl_4As_2.1H_2O$: As, 26.78; calc. for $2H_2O$: 25.95. Found: 27.29.

**II.** Two and three-tenths g. of 3,5-dinitro-4-hydroxy-phenylarsonic acid is reduced as in Preparation II of the mono-amino analog. Yield, 0.4 g.; tolerated dose, questionable at 50 mg./kg.; arsenic content, 25.55%.

**III.** The dinitro acid is reduced as in Preparation III of the mono-amino analog. Yield, 0.4 g.; tolerated dose, 50 mg./kg.; arsenic content, 26.10%.

## Summary.

1. It has been proved that the toxicity of arsphenamine prepared by hydrosulfite reduction of 3-nitro-4-hydroxy-phenylarsonic acid is determined during the reduction of the nitro group.

2. By altering the conditions under which the nitro group is reduced the toxicity of the arsphenamine can be made to fluctuate between wide limits. Two sets of conditions have been determined which enable one to produce arsphenamine of widely different toxicity; one set results in a tolerated dose of 130 mg./kg. and the other of 55 mg./kg.

3. For the consistent production of arsphenamine of the lowest toxicity it is advisable to use pure 3-amino-4-hydroxy-phenylarsonic acid as the starting material.

4. It appears to be general that the amino aryl arseno compounds vary in toxicity with the method of preparation and are obtained in the least toxic condition by the reduction of amino arsonic acids. Due to the formation of by-products during the reduction of the nitro group, more toxic products result if the nitro acids serve as the starting material. These secondary reduction products unite with the amino acid in the subsequent reduction of the arsonic acid group to form unsymmetrical arseno compounds.

I take this opportunity to thank Dr. Reid Hunt for his kindness in determining the toxicity of the large number of samples involved in this work, and Miss Helen A. Pratt for her careful work in preparing some of the intermediates used.

BOSTON, MASSACHUSETTS.

**PLAINTIFF'S EXHIBIT No. 682.**

Offered and admitted in evidence during taking of testimony of Dr. George W. McCoy, a witness on behalf of United States, in Chambers, and annexed to his deposition so taken.

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**PLAINTIFF'S EXHIBIT No. 683.**

Offered and admitted in evidence during taking of testimony of Dr. George W. McCoy, a witness on behalf of United States, in Chambers, and annexed to his deposition so taken.

UNITED STATES PUBLIC HEALTH SERVICE
RUPERT BLUE, SURGEON GENERAL

# QUALITATIVE AND QUANTITATIVE TESTS FOR ARSPHENAMINE AND NEO-ARSPHENAMINE

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# Some Qualitative and Quantitative Tests for Arsphenamine (3, 3'-Diamino-4, 4'-Dioxy-Arsenobenzene Dihydrochloride) and Neo-Arsphenamine (Sodium-3, 3'-Diamino-4, 4'-Dihydroxy-Arsenobenzene-Methanal-Sulphoxalate).[1]

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Previous to the year 1914, all of the arsphenamine (salvarsan) and neo-arsphenamine (neosalvarsan) on the market was manufactured by a single German firm under the supervision of Paul Ehrlich, one of the patentees. Naturally the products were fairly uniform in their composition and properties.

As a result of the present war in Europe, the protection afforded these products in the allied countries, through licenses or patents, has been temporarily withdrawn, and they are now being manufactured in England, France, Japan, Canada, and the United States.

Examinations made by the authors, as well as evidence presented by clinicians (Martin and others, 1916), have revealed the fact that the products of different manufacturers appearing on the market in this country are not all uniform with respect to either their chemical or their physiological properties. Even the last of the German supplies received are stated to be more toxic than the products obtained before the beginning of hostilities in Europe (Ormsby and Mitchell, 1916).

Tentative standards for these preparations (arsphenamine and neo-arsphenamine) have been adopted by the Federal Trade Commission on the recommendation of the United States Public Health Service, but these do not appear to meet all exigencies. It is for this reason and for the purpose of better defining the properties of good preparations that the following qualitative and quantitative tests have been worked out and compiled.

### Arsphenamine—Physical Properties.

Appearance: Arsphenamine is a pale yellow, microcrystalline, hygroscopic powder very unstable in the air. When properly dried, it is free from lumps.

Odor: The pure product is odorless.[2]

Taste: It has a sour astringent taste.

Solubility: Arsphenamine is soluble in water, 1 to 5 parts, methyl alcohol, 1 to 3 parts, and ethyl alcohol, 1 to 12 parts (Wilcox and

[1] Reprint from the Public Health Reports, vol. 33, No. 25, June 21, 1918, pp. 1003-1018.

[2] Commercial samples frequently have the odor of ether due to the incomplete removal of this solvent which is used in precipitating and washing the product.

Webster, 1916). It is readily soluble in ethylene glycol and glycerin, but only slightly soluble in glacial acetic acid, acetone, ether and concentrated hydrochloric acid (Ehrlich and Bertheim, 1912).

The aqueous solution is greenish-yellow [1] in color and reacts strongly acid to litmus.

Moisture content: When dried to constant weight in an atmosphere of dry hydrogen at 105° C., arsphenamine should lose not more than 7.6 per cent of its weight, which corresponds to the loss of 2 molecules of water of crystallization (Gaebel, 1911).

**Arsphenamine—Chemical Properties.**

Behavior toward acids: Dilute mineral acids, with the exception of dilute sulphuric acid, have no noticeable effect on aqueous solutions of arsphenamine [2] (distinction from *neo-arsphenamine*, which yields a precipitate with all dilute mineral acids).

The addition of dilute sulphuric acid, however, produces a yellowish-white precipitate.[3]

The addition of any of the concentrated mineral acids, with the exception of phosphoric, to an aqueous solution of arsphenamine causes the formation of a precipitate (distinction from *neo-arsphenamine*, which is precipitated by phosphoric acid).

In the case of concentrated nitric acid, the precipitate dissolves on the addition of an excess of acid, yielding a red solution.

Acetic acid (36 per cent) produces no noticeable effect when added to an aqueous solution of arsphenamine (distinction from *neo-arsphenamine*, which yields an orange-yellow precipitate on heating the liquid).

Carbon dioxide immediately precipitates arsphenamine from aqueous solutions.

Behavior toward alkalies: The addition of sodium hydroxide test solution to an aqueous solution of arsphenamine produces a precipitate which dissolves in an excess of the reagent.[4]

Solutions of barium and calcium hydroxides also yield precipitates.

The alkali carbonates produce precipitates which are not soluble in an excess of the reagent.

Behavior toward oxidizing agents: The addition of chlorine or bromine water, ferric chloride, or chromic acid to an aqueous solution of arsphenamine causes the liquid to become red or brownish red in color.

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[1] The brownish-yellow or brown color, sometimes observed in solutions prepared from commercial samples, is thought to be an indication of the presence of oxidation products or other impurities.

[2] For carrying out the above tests, or those which follow, a 1 in 1,000 aqueous solution of the product was used, unless otherwise mentioned.

All of the test solutions employed were made according to the U. S. P. IX, unless differently stated.

[3] Precipitation also occurs on the addition of sulphates.

[4] Precipitation first begins when 1 mol of sodium hydroxide has been added for each mol of arsphenamine in solution. If the addition of sodium hydroxide is continued until precipitation is complete, a further addition of alkali will cause the precipitate to go into solution as the phenolate (Ehrlich and Bertheim, 1912).

Behavior toward general alkaloidal reagents: An aqueous solution of arsphenamine slowly reduces gold and platinic chloride test solutions in the cold, yielding characteristic precipitates. Reduction is hastened by heating.

Mercuric chloride test solution produces a light-yellow colored precipitate which becomes white on heating.

Mayer's reagent gives a heavy, orange-yellow precipitate.

Picric acid test solution produces a copious yellow precipitate (distinction from *neo-arsphenamine*, aqueous solutions of which become only slightly turbid on the addition of picric acid test solution).

Phosphotungstic acid test solution [1] produces a dirty gray colored precipitate, insoluble in an excess of the reagent, but which dissolves upon the addition of sodium carbonate, or ammonia water, yielding a deep blue colored solution.

Phosphomolybdic acid test solution gives a similar color reaction if the liquid is made acid with hydrochloric acid after the addition of the alkali (Gaebel, 1911b).

Behavior toward other reagents: The addition of a freshly prepared solution of ferric chloride and potassium ferricyanide to an aqueous solution of arsphenamine immediately produces a copious precipitate of Prussian blue.

Nessler's reagent is instantly reduced.

The addition of silver nitrate test solution first causes a yellow color to appear, then the formation of a gelatinous precipitate which changes to a black powder on heating. The black precipitate is soluble in dilute nitric acid.

Millon's reagent gives a copious yellow precipitate.

If a drop of copper sulphate solution (4 in 100) be added to 5 cubic centimeters of an aqueous solution of salvarsan (1 in 1,000), to which has been added 0.5 cubic centimeter of hydrogen dioxide solution and 0.5 cubic centimeter of ammonia water, an intense bluish-green color will develop. If the blue solution is poured into alcohol (90 per cent), a blue precipitate, which can be separated by centrifugation, will be obtained (Denigès and Labat, 1911).

To 2 or 3 cubic centimeters of an aqueous solution of arsphenamine (1 in 1,000) add 3 or 4 drops of dilute hydrochloric acid (an amount sufficient to cause the disappearance of most of the yellow color), cool the solution by holding the test tube in ice water and add 3 or 4 drops of a solution of sodium nitrite (5 in 1,000). This results in the formation of a diazo compound having a greenish-yellow fluorescence (distinction from *neo-arsphenamine*, which forms a brown solution).

[1] The phosphotungstic acid solution used in the above test was prepared according to the method of Folin and Denis (1912).

If a small portion of the solution containing the diazo compound be added drop by drop to an alcoholic solution of α-naphthylamine hydrochloride, a beautiful violet color will develop (Gaebel, 1911b).

With an alcoholic solution of β-naphthylamine hydrochloride, a light-brown color develops (distinction from *atoxyl*, which yields a red-colored solution; Wilcox and Webster, 1916).

If some of the diazotized solution be added to a freshly prepared solution of resorcinol (1 part in 20 parts of a 10 per cent sodium hydroxide solution), a deep red color will develop (Abelin, 1911).

The direct addition of Ehrlich and Pauly's (1904) diazo reagent to an aqueous solution of arsphenamine produces a brownish-red color.

Tests for arsenic: A positive test for arsenic is obtained by applying the Reinsch test.

The Marsh test gives positive results if the arsphenamine is first decomposed by oxidation with nitric and sulphuric acids and the resulting solution reduced by the addition of potassium metabisulphite (Wilcox and Webster, 1916).

Under the foregoing conditions, the Gutzeit's test also gives positive results.

The biological test with *Penicillium brevicaule*, carried out according to the method of Abel and Buttenberg, gives the characteristic garlic odor (Gaebel, 1911b).

Tests for impurities: An aqueous solution of arsphenamine yields no precipitate with hydrogen sulphide, even after the addition of hydrochloric acid and warming (absence of *inorganic arsenic compounds*).

If 4 cubic centimeters of sodium acetate test solution are added to 5 cubic centimeters of an aqueous solution of arsphenamine (1 in 10), the mixture heated for a few minutes and the precipitate removed by filtration, the filtrate should not yield a precipitate within 12 hours on being made alkaline with 3 cubic centimeters of ammonia water and the addition of magnesia mixture (absence of *inorganic arsenic compounds*, Moeller and Thoms, 1914).

If about 0.1 gram of arsphenamine be placed in a test tube, a small quantity of zinc dust and some dilute hydrochloric acid added,[1] and the mouth of the tube covered with a piece of filter paper moistened with a 5 per cent solution of cadmium chloride, the paper should not be stained yellow within a few minutes (absence of *sulphur compounds*).[2]

Dissolve exactly 1.0 gram of arsphenamine in 10 cubic centimeters of methyl alcohol contained in a 100 cubic centimeter volumetric flask. Dilute the solution with 75 cubic centimeters of distilled

[1] A drop of platinic chloride test solution may be added to start the reaction.

[2] Arsinsulphide and Arsinsesquisulphide have been suggested as possible impurities in arsphenamine (Schamberg, Kolmer, and Raizies, 1917).

Most of the commercial samples of arsphenamine examined in this laboratory gave a positive test for sulphur by the method described above.

water, add 1.5 grams of precipitated calcium carbonate, and shake to precipitate the salvarsan base. Dilute with distilled water to exactly 100 cubic centimeters and filter. To exactly 50 cubic centimeters of the filtrate add 75 cubic centimeters of water, 5 cubic centimeters of N/1 hydrochloric acid volumetric solution, and titrate with N/20 iodine volumetric solution. The amount of iodine volumetric solution consumed, expressed in cubic centimeters, represents the percentage of *amino-oxy-phenyl-arsenoxide* present in the material. The amount of the oxide present in good products varies from 0.5 to 0.8 per cent [1] (Ehrlich and Bertheim, 1912).

### Neo-Arsphenamine—Physical Properties.

Appearance: Neo-arsphenamine is an orange-yellow, microcrystalline powder which changes rapidly in the air, becoming dark brown in color.

Odor: The pure preparation is odorless.[2]

Taste: It has a taste somewhat resembling that of garlic.[3]

Solubility: Neo-arsphenamine is readily soluble in water or glycerin, but only slightly soluble in methyl alcohol, ethyl alcohol, acetone, and ether.

The aqueous solution, when freshly prepared, is yellow in color and reacts neutral toward litmus. The solution rapidly becomes brown on exposure to the air.

### Neo-Arsphenamine—Chemical Properties.

Behavior toward acids: Dilute as well as concentrated mineral acids yield precipitates with an aqueous solution of neo-arsphenamine. Precipitation does not occur immediately, but is first noticeable after several minutes (distinction from *arsphenamine*, which is not precipitated by dilute mineral acids or concentrated phosphoric acid, but yields a precipitate immediately with concentrated hydrochloric, sulphuric, and nitric acids).

The addition of acetic acid (36 per cent) to an aqueous solution of neo-arsphenamine yields a yellow colored precipitate when the liquid is heated (distinction from *arsphenamine*, which is not precipitated).

Behavior toward alkalies: The addition of sodium hydroxide test solution to an aqueous solution of neo-arsphenamine produces no noticeable effect (distinction from *arsphenamine*, a solution of which yields a precipitate).

Solutions of barium and calcium hydroxides yield turbid solutions or faint precipitates.

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[1] The amount of oxide found in the commercial samples examined in this laboratory varied from 0.3 to 2.8 per cent.

[2] Commercial samples sometimes have an odor of garlic, due apparently to slight decomposition.

[3] Commercial samples frequently have a saline taste, probably due to the presence of sodium chloride which is said to be used as a diluent for products high in arsenic content.

Solutions of the alkali carbonates do not produce precipitates (distinction from *arsphenamine*).

Behavior toward oxidizing agents: Similar to the reactions with *arsphenamine*.

Behavior toward general alkaloidal reagents: Similar to the reactions with *arsphenamine*, except that the precipitate with picric acid test solution develops slowly and is relatively small in amount.

Mayer's reagent does not yield a precipitate until the solution has been made acid with dilute hydrochloric acid (distinction from a solution of *arsphenamine*, which yields a precipitate on the direct addition of the reagent).

Behavior toward other reagents: The behavior of an aqueous solution of neo-arsphenamine toward a freshly prepared solution of ferric chloride and potassium ferricyanide, silver nitrate test, and Nessler's reagent is similar to that described under *arsphenamine*.

Millon's reagent yields a copious brown-colored precipitate.

If 5 cubic centimeters of dilute hydrochloric acid be added to 10 cubic centimeters of an aqueous solution of neo-arsphenamine (1 in 100) and the mixture heated, the irritating odor of sulphur dioxide will be developed (New and Nonofficial Remedies, 1917).

If about 0.1 gram of neo-arsphenamine be placed in a test tube, a small quantity of zinc dust and some dilute hydrochloric acid[1] added and the mouth of the tube covered with a piece of filter paper moistened with a 5 per cent solution of cadmium chloride, the paper will be stained yellow within a few minutes (distinction from *arsphenamine*).

If 5 cubic centimeters of an aqueous solution of neo-arsphenamine be boiled with 1 cubic centimeter of dilute hydrochloric acid, a violet color will develop on the addition of a few drops of Schiff's reagent [1] (distinction from *arsphenamine*, Denigès and Labat, 1913).

The diazotized solution [2] of neo-arsphenamine gives color reactions with α-naphthylamine hydrochloride and resorcinol similar to those described under *arsphenamine*. With β-naphthylamine hydrochloride, a brownish-red color develops.

Tests for arsenic: The reactions are similar to those noted under *arsphenamine*.

Tests for impurities: An aqueous solution of neo-arsphenamine [3] yields no precipitate on passing in hydrogen sulphide gas (absence of *inorganic arsenic compounds*).

If 5 cubic centimeters of acetic acid (36 per cent) be added to 5 cubic centimeters of an aqueous solution of neo-arsphenamine, the mixture heated a few minutes and the precipitate removed by filtra-

[1] By boiling with hydrochloric acid, the methylene group of the neo-arsphenamine is detached and oxidized to formic aldehyde.

[2] In diazotizing the solution, add the sodium nitrite solution first, then the hydrochloric acid in order to avoid precipitation.

[3] Hydrochloric acid should not be added, as acids produce a precipitate.

tion, the filtrate should not yield a precipitate within 12 hours on the addition of an excess of ammonia water and some magnesia mixture (absence of *inorganic arsenic compounds*).

**Arsphenamine and Neo-Arsphenamine—Quantitative Determination of Arsenic.**

The methods for the quantitative determination of arsenic in organic compounds, described in the literature, are both numerous and varied in their manner of execution. Most of them, however, are more or less complicated and are, therefore, not suitable for use in routine work where the number of samples of material to be analyzed is large. They involve, for example, such processes as fusion (methods of La Coste and Michaelis, 1880; of Pringsheim, 1904; of Little, Cahen, and Morgan, 1909; and of St. Warunis, 1912); or distillation (methods of Schneider and Fyfe, 1906; of Jannasch and Seidel, 1910; and of Bohrisch and Kürschner, 1911); and the subsequent estimation of the arsenic by gravimetric or volumetric methods.

Among the simpler and more practical procedures, which have received special mention in connection with the estimation of the arsenic in arsphenamine or neo-arsphenamine, are the methods of Gaebel (1911c) and Denigès and Labat (1911), in which an aqueous solution of the material is titrated directly with iodine or potassium permanganate volumetric solution. In this class are, likewise, the methods of Norton and Koch (1905), Lehmann (1912), and Ewins (1916). In these methods the arsenic is, first, either oxidized or reduced by digesting the material with suitable reagents and then estimated by titration in one of the usual ways.

For the purpose of determining which one of these simpler methods is the most accurate, and can be depended upon to give the best results in the hands of different operators, a few preliminary analyses were carried out. The results obtained indicated that the methods of Gaebel, Ewins, and Lehmann offered the greatest possibilities for fulfilling these conditions.[1] A large number of samples of both arsphenamine and neo-arsphenamine were, therefore, subjected to analysis by these methods. For comparison, a number of gravimetric determinations were also made. Detailed descriptions of these methods, together with the data obtained in the analyses, follow:

Gaebel's titration method: Weigh out accurately about 0.2 gram of arsphenamine and dissolve it in 100 cubic centimeters of distilled water contained in an Erlenmeyer flask. Add 1 cubic centimeter of starch test solution and titrate with N/20 iodine volumetric solution

[1] The method of Denigès and Labat was eliminated from the field of possibilities, as the end point obtained in the titration is too indefinite to yield accurate results in the hands of different analysts.

The Ewins method was given preference over that of Norton and Koch, as it is essentially an improved modification of the latter.

to a permanent blue color.[1] One cubic centimeter of N/20 iodine volumetric solution is equivalent to 0.001875 gram of arsenic.

Ewins's method: Weigh out accurately 0.1 to 0.2 gram of the substance and transfer it to a long-necked Kjeldahl flask of 300 cubic centimeters capacity. Add 10 grams of potassium sulphate and 0.2 to 0.3 gram of starch (after a little experience the amount can be sufficiently accurately estimated and need not be weighed). Wash in any solid adhering to the neck of the flask with a little water. Cautiously add 20 cubic centimeters of concentrated sulphuric acid and heat the mixture on wire gauze over a Bunsen flame. As soon as the contents of the flask begin to froth, lower the flame somewhat until the frothing diminishes, which generally takes place within 10 to 15 minutes from the commencement of heating. Again turn on the flame and continue heating until the liquid becomes colorless or of a very pale yellow tint. Shake the flask once or twice during digestion, in order to wash down any material adhering to the walls. The time required for the complete oxidation of the material is usually about 4 hours.

After the liquid has cooled, transfer it quantitatively to an Erlenmeyer flask of 350 cubic centimeters capacity and make it just distinctly alkaline by the addition of sodium hydroxide solution (10 to 12N). A small piece of litmus paper added to the contents of the flask serves as the most convenient indicator. Cool the flask and its contents to about 30° to 40° C. and add concentrated sulphuric acid, drop by drop, until the solution is again distinctly acid (care should be taken that no drops of sodium hydroxide solution remain on the inside of the neck of the flask, which should be well washed down with water, or the flask may be stoppered and shaken). Now add from a burette a saturated solution of sodium hydrogen carbonate, until the solution becomes distinctly alkaline and an excess of 5 to 10 cubic centimeters of the reagent is present.

To this solution, add 2 cubic centimeters of a 1 per cent solution of starch, and titrate the arsenious acid present with N/20 iodine volumetric solution. Toward the end of the reaction, the solution usually develops a reddish-violet tint, which fades on standing. The end-point, however, is reached when the solution acquires the characteristic deep blue color given by free iodine in the presence of starch. From the amount of iodine consumed, the percentage of arsenic present is easily calculated. One cubic centimeter of N/20 iodine volumetric solution is equivalent to 0.001875 gram of arsenic.

Gravimetric method: Weigh out accurately about 0.2 gram of the product and transfer it to a Kjeldahl flask of 300 cubic centimeters capacity. Add 1.5 grams of a mixture of equal parts of sodium

[1] As the greenish-yellow color of the arsphenamine solution becomes less and less pronounced and finally vanishes on the addition of iodine solution, the titration may also be carried out without the use of an indicator.

nitrate and potassium nitrate, 200 cubic centimeters of distilled water and 5 cubic centimeters of concentrated sulphuric acid. Heat the mixture slowly under a hood to allow the escape of the nitric acid fumes. Add a small quantity of concentrated or fuming nitric acid from time to time, until oxidation is completed, which is generally indicated by the disappearance of the yellow color.[1] Continue the digestion until the volume of the liquid has been reduced to about 15 cubic centimeters,[2] cool, add 100 cubic centimeters of distilled water and again concentrate to about 15 cubic centimeters, in order to remove the last trace of nitric acid. If the product has been completely oxidized and all traces of nitric acid have been removed, the liquid will be water clear at this point. After cooling, cautiously neutralize the liquid with strong ammonia water and transfer it to a 300 cubic centimeter beaker, using a small quantity of distilled water for rinsing the flask.

To the solution, which will now contain all of the arsenic in the form of arsenate, add 10 to 20 cubic centimeters of 2N ammonium chloride solution for every 50 cubic centimeters of the liquid, then 20 cubic centimeters of magnesia mixture, drop by drop, with constant stirring. Finally add an amount of strong ammonia water, equal to one-third the volume of the liquid, and 2 cubic centimeters of alcohol. After allowing the mixture to stand for 12 hours, collect the precipitate, with the aid of a suction pump, in a Gooch crucible, which has been prepared as follows:

Cover the bottom of the crucible with a thin layer of asbestos, which has previously been washed with ammonia water (2.5 per cent), and dry in an oven at 110° C. Remove the crucible from the oven and place it in a larger porcelain crucible, fitted with an asbestos ring so that the sides and bottom of the two will not touch, put on the cover and heat slowly over an open flame until there is a light red glow on the outer crucible (Treadwell-Hall, 1905). Remove the Gooch crucible, cool in a desiccator and weigh.

After the precipitate has been collected, dry the crucible as described above, but add a crystal of ammonium nitrate before heating over the open flame. Finally cool the crucible and weigh. The weight of the precipitate multiplied by 0.48275 represents the amount of arsenic present in the sample taken for analysis.

Lehmann's method: Weigh out accurately about 0.2 gram of the substance and transfer to a 200 cubic centimeter Erlenmeyer flask.[3] Add 1 gram of finely powdered potassium permanganate and 5 cubic centimeters of dilute sulphuric acid and allow the mixture to stand for about 10 minutes. Rotate the flask frequently during this time to insure the complete mixing of the materials. Now add 10 cubic

[1] Sometimes the liquid may still have a pale yellow tint.

[2] Concentration should be effected in such a manner that the formation of sulphuric acid fumes in large quantities will be avoided.

[3] An Erlenmeyer flask, fitted with a glass stopper, is most suitable for this purpose. 479-10

centimeters of concentrated sulphuric acid, in portions of about 2 cubic centimeters, rotating the flask after each addition.

When the reaction has ceased, add a quantity (about 5 to 7 cubic centimeters) of hydrogen dioxide solution sufficient to dissolve all of the brown precipitate. Toward the end, the hydrogen dioxide solution should be added, drop by drop, to avoid any great excess. Dilute the liquid with 25 cubic centimeters of distilled water and boil over wire gauze for about 10 minutes, or until the excess of hydrogen dioxide has been completely removed.[1]

After dilution with 50 cubic centimeters more of distilled water, cool the solution and add 2.5 grams of potassium iodide. Stopper the flask tightly and allow it to stand in a cool place for 1 hour. Finally titrate the liberated iodine with N/10 sodium thiosulphate volumetric solution without the use of starch test solution as an indicator.[2] One cubic centimeter of N/10 sodium thiosulphate solution is equivalent to 0.003748 gram of arsenic.

TABLE 1.—*Arsenic content of commercial samples of arsphenamine.*

| Manufacturer. | Name of product. | Lot number. | Per cent of arsenic. | | | |
|---|---|---|---|---|---|---|
| | | | Direct titration with N/20 iodine V. S. | Ewins's method. | Gravimetric method. | Lehmann's method. |
| Dermatological Research Laboratories, Philadelphia, Pa. | Arsenobenzol | 630 | ..... | 30.08 | ..... | ..... |
| Do | do | 652 | ..... | 29.61 | ..... | ..... |
| Do | do | 721 | ..... | 29.11 | ..... | ..... |
| Do | do | 740 | 29.92 | 30.33 | 31.58 | 31.32 |
| Do | do | 750 | 29.24 | ..... | 31.16 | 31.34 |
| Do | do | 755 | 29.34 | 29.26 | 31.13 | 30.94 |
| Do | do | 757 | 29.43 | 29.90 | ..... | ..... |
| Do | do | 767 | 29.53 | 29.20 | ..... | ..... |
| Do | do | 788 | 29.33 | 29.27 | ..... | ..... |
| Do | do | 791 | 29.19 | 29.26 | ..... | ..... |
| Do | do | 799 | 29.29 | 29.69 | 31.52 | 31.40 |
| Do | do | 809 | 29.95 | 29.59 | 30.87 | 30.46 |
| Do | do | 826 | ..... | 29.20 | ..... | ..... |
| Do | do | 841 | 29.28 | 29.19 | 31.54 | 31.38 |
| Do | do | 845 | 29.07 | 29.30 | ..... | ..... |
| Do | do | 862 | 29.52 | 29.91 | ..... | ..... |
| Do | do | 873 | 29.53 | 29.71 | 31.38 | 31.22 |
| Do | do | 875 | ..... | 29.74 | ..... | ..... |
| Do | do | 886 | 29.53 | 30.22 | 31.46 | 31.18 |
| Do | do | 890 | 29.23 | ..... | 31.35 | 31.22 |
| Do | do | 900 | 29.42 | 29.70 | 31.07 | 30.94 |
| Do | do | 914 | ..... | 28.71 | ..... | ..... |
| Do | do | 928 | 29.56 | 30.06 | 31.17 | 31.03 |
| Do | do | 952 | 29.62 | 30.33 | 31.07 | 31.03 |
| Do | do | 954 | ..... | 31.24 | ..... | ..... |
| Do | do | 966 | ..... | 29.45 | ..... | ..... |
| Do | do | 973 | ..... | 30.51 | ..... | ..... |
| Do | do | 980 | ..... | ..... | ..... | 30.46<br>30.52 |
| Do | do | 1008 | ..... | ..... | ..... | 30.56<br>30.63 |
| Do | do | 1013 | ..... | ..... | ..... | 30.44<br>30.72 |
| Do | do | 1017 | ..... | ..... | ..... | 31.16<br>31.00 |

[1] Experience has shown that it is practically impossible to remove all of the hydrogen dioxide by boiling, unless the solution be evaporated to a very small volume, when it is very liable to become colored brown, due to the further action of the hot concentrated acid. In the analyses made by the authors the last trace of hydrogen dioxide was removed by the addition of a drop or two of permanganate solution (1 per cent) and the resulting pink color removed by the addition of oxalic acid solution in very slight excess.

[2] A blank test should be carried out under exactly the same conditions and the proper corrections made. The blank tests usually consume from 0.1 to 0.3 cubic centimeter of the iodine solution.

TABLE 1.—*Arsenic content of commercial samples of arsphenamine*—Continued.

| Manufacturer. | Name of product. | Lot number. | Per cent of arsenic. | | | |
|---|---|---|---|---|---|---|
| | | | Direct titration with N/20 iodine V. S. | Ewins's method. | Gravimetric method. | Lehmann's method. |
| Dermatological Research Laboratories, Philadelphia, Pa. | Arsenobenzol | 1020 | | | | 31.27<br>31.09 |
| Do | do | 1048 | | | | 30.38<br>30.40 |
| Do | do | 1062 | | | | 30.41<br>30.61 |
| Do | do | 1072 | | | | 30.15<br>30.26 |
| Do | do | 1077 | | | | 30.54 |
| Do | do | 1095 | | | | 30.57 |
| Do | do | 1105 | | | | 30.64 |
| Do | do | 1125 | | | | 30.49 |
| Do | do | 1135 | | | | 30.82<br>30.73 |
| Do | do | 1142 | | | | 30.53 |
| Farbwerke-Hoechst Co., at H. A. Metz Laboratories (Inc.), New York. | Salvarsan | BDB | 29.29 | 31.10 | | |
| Do | do | BFB | 30.69 | 31.30 | | |
| Do | do | BHB | 29.02 | 31.38 | | |
| Do | do | BLB | 29.40 | | | |
| Do | do | BMB | 29.88 | 29.98 | | |
| Do | do | BPB | 29.34 | 30.88 | | |
| Do | do | BVB | 29.60 | 31.44 | | |
| Do | do | BXB | 29.43 | 30.35 | | |
| Do | do | DBB | 28.87 | 29.89 | 31.16 | 31.22 |
| Do | do | DFB | 29.97 | 31.30 | 31.47 | 31.32 |
| Do | do | DHB | 30.05 | 30.76<br>31.22 | | |
| Do | do | DHB | 30.24 | 30.76 | | |
| Do | do | DJB | 29.60 | 31.05 | | |
| Do | do | DLB | 30.63 | 31.05 | | |
| Do | do | DMB | 29.07<br>29.62 | 30.72<br>29.57 | | 31.50 |
| Do | do | DUB | 29.16 | 30.31 | | |
| Do | do | FBB | 29.52 | 31.00<br>31.54 | 31.85 | 31.30 |
| Do | do | HBB | 30.74 | 31.64 | 31.63 | 31.28 |
| Do | do | JBB | | 30.43 | | |
| Do | do | LBB | | | 31.21 | 31.20 |
| Do | do | MBB | | | | 32.24<br>32.24<br>32.06<br>32.24<br>32.06<br>32.19 |
| Do | do | UBB | | | | 31.20 |
| Do | do | XBB | | | | 31.27<br>30.92 |
| Do | do | I75 | | | 31.15 | 30.85<br>30.63 |
| Do | do | I76 | | | 31.15 | 30.72<br>31.52<br>31.58 |
| Do | do | I77 | | | 31.80 | 31.58<br>31.64<br>31.58 |
| Do | do | I78 | | | | 30.82<br>30.82<br>30.91<br>30.94 |
| Do | do | I79 | | | 31.56 | 31.36<br>31.58 |
| Do | do | I81 | | | | 32.15 |
| Do | do | I82 | | | | 31.97 |
| Les Etablissements Poulenc Frères, Paris. | Arsenobenzol "Billon." | D632 | | 29.93 | | 30.74 |
| The Diarsenol Co. (Ltd.), Toronto, Canada. | Diarsenol | BS7520 | 28.89 | 29.02 | | |
| Do | do | BS7521 | 29.05 | | | 30.18 |
| Do | do | 1275 | | | | 30.73 |
| Fankyo & Co., Tokyo | Arsaminol | 68 | 29.85 | 31.26 | | 31.54 |
| Do | do | 54 | 29.89 | 31.20 | | 32.24 |
| Arsemin Co., Tokyo | Neo Neo Arsemin (Salvarsan sod.) | DEIA | | 31.04 | | |
| Do | do | DEIS | | 29.73 | 29.47 | 29.50 |

TABLE 2.—*Arsenic content of commercial samples of neo-arsphenamine.*

| Manufacturer. | Name of product. | Lot number. | Per cent of arsenic. | | |
|---|---|---|---|---|---|
| | | | Ewins's method. | Gravimetric method. | Lehmann's method. |
| Farbwerke vorm. Meister Lucius & Brüning, Hoechst a. M. | Neosalvarsan | HV | 18.38 | 19.82 | 20.12 |
| Les Etablissements Poulenc Frères, Paris. | Novarsenobenzol "Billon" | B1539 | 17.80 | 20.34 | 19.93 |
| Do | do | B2126 | 18.98 | | 20.21 |
| Do | do | B2137 | 18.06 | 19.90 | 19.74 |
| Do | do | 8750 | 18.19 | 20.35 | 19.93 |
| Do | do | 9651 | 18.24 | 20.05 | 20.12 |
| Do | do | | | | 19.84 |
| Anglo-French Drug Co. (Ltd.), London. | Ampsalvs | | 18.28 | | 19.65 |
| Kokusan-Seiyakusho, Tokyo | Neotanvarsan | 19 | 18.26 | | |
| Do | do | 20 | 18.15 | 18.27<br>18.34 | 18.10 |
| Do | do | 21 | 18.10 | 18.19 | 18.30 |
| Banyu Co., Tokyo | Neochramisol | CHA | 18.82 | | [a] 17.93 |
| Do | do | CHA | 18.47 | | 18.41 |
| Sankyo & Co., Tokyo | Neoarsaminol | N139 | 16.56 | 16.96 | 17.04 |
| Do | do | N153 | 16.81 | | 16.70 |
| | | | | | 17.21 |
| Do | do | N183 | | | 17.44 |
| | | | | | 17.27 |
| Do | do | N185 | 16.80 | 16.96 | 16.89 |
| Synthetic Drug Co., Toronto | Neodiarsenol | 180 | | | 16.09 |
| Do | do | 181 | | | 15.50 |
| Do | do | 182 | | | 16.68 |
| Do | do | 183 | | | 17.55 |
| | | | | 15.79 | [b] 15.33 |
| Do | do | 189 | | 16.05 | |
| Do | do | 262 | | | 16.35 |
| | | | | | 15.37 |
| Do | do | 264 | | | 15.29 |
| | | | | | 15.46 |
| Do | do | 267 | | | 15.30 |

[a] The tube had been opened for a considerable length of time previous to analysis and the product was oxidized to a considerable extent.
[b] The sample was not uniform.

A survey of the preceding tables shows that the results obtained by the Lehmann and the gravimetric methods are nearly identical, while those obtained by direct titration with iodine volumetric solution are relatively low in all cases. With the Ewins method, the results are occasionally of the same magnitude as those obtained by the gravimetric determination, but, as a rule, they are also relatively low.

With respect to the titration method, Gaebel (1911c) states that the reaction between arsphenamine and iodine is a reversible one, viz:

$$C_{12}H_{12}O_2N_2As_2.2HCl.2H_2O + 8I + 4H_2O \rightleftarrows 2C_6H_5O_4NAs.HCl + 8HI.$$

As a consequence a state of equilibrium is reached before all of the arsphenamine has been oxidized and the amount of iodine solution consumed is less than that required by theory. This investigator states further that the reagents (sodium bicarbonate, sodium acetate, borax, etc.) usually employed for overcoming this difficulty in iodometric titrations of arsenious compounds are of no value in this case, a condition which has also been observed by the authors. This method appears, therefore, to be of little value.

The low percentages obtained by the Ewins method are apparently the result of a loss of arsenic through volatilization. It was thought that this loss might be avoided by slowing the rate of digestion. A number of samples were, therefore, digested for some time in the cold and then slowly over a low flame. Samples from the same tubes were also digested rapidly in order to obtain data for comparison. The results obtained follow:

TABLE 3.—*Effect of rate of digestion on the results obtained by the Ewins method.*

| Manufacturer. | Name of product. | Lot number. | Per cent of arsenic, Ewins's method. | |
|---|---|---|---|---|
| | | | Slow digestion. | Rapid digestion. |
| Dermatological Research Laboratories, Philadelphia | Arsenobenzol. | 740 | 30.33 | 28.64 |
| Do | do | 750 | | 28.73 |
| Do | do | 799 | 29.69 | 28.60 |
| Do | do | 873 | 28.71 | 28.69 |
| Do | do | 886 | 30.22 | 28.52 |
| Do | do | 890 | | 28.65 |
| Do | do | 952 | 30.33 | 28.62 |

The above data indicate that the rate at which digestion is allowed to proceed is a factor which influences the final result to a very considerable extent. But they also show that the results are low even when digestion is carried out very slowly. It appears, therefore, that this method in its present form is objectionable. It is possible that greater accuracy might be attained by condensing the fumes which escape during digestion, reuniting the distillate with the contents of the Kjeldahl flask previous to neutralization, and finally titrating the mixture. Work along this line is, however, necessary before a positive statement can be made.

The method of Lehmann, with the slight modifications recommended in the footnotes, is accurate and reliable. It is simple, requires but small quantities of inexpensive reagents, and can be completed in about one and one-half hours. It, therefore, appears to be superior to any of the other methods mentioned for the routine analysis of these products.

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## PLAINTIFF'S EXHIBIT No. 685.

EXECUTIVE ORDER FIXING SALARY OF, AND VESTING CERTAIN POWER AND AUTHORITY IN, THE ALIEN PROPERTY CUSTODIAN APPOINTED UNDER TRADING WITH THE ENEMY ACT.

[No. 2744.]

By virtue of the authority vested in me by "an Act to define, regulate, and punish trading with the enemy" approved October 6, 1917, I hereby make and establish the following order:

1. I hereby fix the salary of the Alien Property Custodian heretofore appointed at the sum of $5,000 per annum. I direct that said Alien Property Custodian shall give a bond in the amount of $100,000.00, with security to be approved by the Attorney General, and which bond shall be conditioned to well and faithfully hold, administer, and account for all money and property in the United States due or belonging to an enemy or ally of enemy, or otherwise, which may be paid, conveyed, transferred, assigned, or delivered to said Custodian under the provisions of the Trading with the Enemy Act.

2. I hereby authorize and empower the Alien Property Custodian to employ and appoint in the manner provided in the Trading with the Enemy Act in the District of Columbia and elsewhere, and to fix the compensation of such clerks, attorneys, investigators, accountants, and other employees as he may find necessary for the due administration of the powers conferred on such Alien Property Custodian by law or by any order of the President heretofore or hereafter made.

3. I hereby vest in the Alien Property Custodian the executive administration of the provisions of Section 12 of the Trading with the Enemy Act pertaining

to the designation of a depositary, or depositaries, and requiring all such designated depositaries to execute and file bonds and prescribing the form, amount, and security thereof. And I authorize and empower the Alien Property Custodian to designate any bank, or banks, or trust company, or trust companies, or other suitable depositary or depositaries located and doing business in the United States, as the depositary or depositaries with which said Alien Property Custodian may deposit any stocks, bonds, notes, time drafts, time bills of exchange, or other securities or property (except money, or cheques, or drafts payable on demand) of an enemy or ally of enemy and to prescribe the bond or bonds and the form, amount, and security thereof which shall be given by said depositary or depositaries.

4. The following sums, or so much thereof as may be necessary, are hereby allotted out of the funds appropriated by the Trading with the Enemy Act to the following named officers:

| | |
|---|---|
| To the Alien Property Custodian | $100,000.00 |
| To the Federal Trade Commission | $ 25,000.00 |
| To the Secretary of the Treasury | $ 15,000.00 |
| To the War Trade Board | $ 25,000.00 |

to be expended in the administration of the powers vested respectively in them by law or by any order heretofore or hereafter made by me.

5. The powers and authority herein vested in said Alien Property Custodian are in addition to the powers and authority vested in said Alien Property Custodian by the Executive Order of October 12, 1917.

WOODROW WILSON.

THE WHITE HOUSE,
29 October, 1917.

## PLAINTIFF'S EXHIBIT No. 686.

EXECUTIVE ORDER SUPPLEMENTAL TO EXECUTIVE ORDER OF OCTOBER 12, 1917, VESTING POWER AND AUTHORITY IN DESIGNATED OFFICERS AND MAKING RULES AND REGULATIONS UNDER TRADING WITH THE ENEMY ACT AND TITLE VII OF THE ACT APPROVED JUNE 15, 1917.

[No. 2770.]

By virtue of the authority vested in me by "An Act to Define, Regulate and Punish Trading with the Enemy and for Other Purposes," approved October 6, 1917, I hereby make the following orders, rules and regulations:

I. I hereby prohibit any and all foreign insurance companies from doing business within the United States after February 1, 1918, unless such companies shall first obtain from the Secretary of the Treasury licenses to do business.

II. I further hereby vest in the Secretary of the Treasury the power and authority to issue at any time, upon such terms and conditions as the Secretary of the Treasury may deem proper and as are not inconsistent with law, or to refuse, a license to any foreign insurance company to do business within the United States through agencies, branch offices or otherwise.

WOODROW WILSON.

THE WHITE HOUSE,
7 December, 1917.

## PLAINTIFF'S EXHIBIT No. 687.

EXECUTIVE ORDER ALLOTTING APPROPRIATION UNDER TRADING WITH THE ENEMY ACT.

[No. 2790.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy," approved October 6, 1917, I hereby make and establish the following order:

The following sums or so much thereof as may be necessary are hereby allotted out of the funds appropriated by the Trading with the Enemy Act to the following named officers:

| | |
|---|---|
| To the War Trade Board | $155,000.00 |
| To the Alien Property Custodian | 80,000.00 |
| To the Secretary of the Treasury | 10,000.00 |
| To the Federal Trade Commission | 5,000.00 |

to be expended in the administration of the powers vested respectively in them by law, or by any order heretofore or hereafter made by me.

WOODROW WILSON.

THE WHITE HOUSE,
22 January, 1918.

## PLAINTIFF'S EXHIBIT No. 688.

EXECUTIVE ORDER PRESCRIBING RULES AND REGULATIONS UNDER SECTION 5 OF THE TRADING-WITH-THE-ENEMY ACT AND SUPPLEMENTING RULES AND REGULATIONS HERETOFORE PRESCRIBED UNDER TITLE 7 OF THE ESPIONAGE ACT.

[No. 2796.]

Whereas, by virtue of the authority vested in me by the act approved June 15, 1917, known as the Es-

pionage Act, I directed by Executive order, dated September 7, 1917, that the regulations, orders, limitations, and exceptions prescribed by me in relation to the export of coin, bullion, and currency should be administered by the Secretary of the Treasury, and upon his recommendation prescribed certain regulations in relation thereto; and

Whereas, by Executive order, dated October 12, 1917, made under authority of the act aforesaid and of the act approved October 6, 1917, known as the Trading-with-the-Enemy Act, I vested in the Secretary of the Treasury the executive administration of any investigation, regulation, or prohibition of any transactions in foreign exchange, export, or earmarking of gold or silver coin or bullion or currency, transfers of credit in any form (other than credits relating solely to transactions to be executed wholly within the United States) and transfers of evidences of indebtedness or of the ownership of property between the United States and any foreign country or between residents of one or more foreign countries by any person within the United States, and I further vested in the Secretary of the Treasury the authority and power to require any person engaged in any such transaction to furnish, under oath, complete information relative thereto, including the production of any books of account, contracts, letters, or other papers in connection therewith in the custody or control of such person, either before or after such transaction is completed; and

Whereas, by said Executive order, dated October 12, 1917, I authorized and directed the Secretary of the Treasury for the purpose of such executive administration to take such measures, adopt such administrative procedure, and use such agency or agencies as he may from time to time deem necessary and proper for that purpose; and

Whereas, the Secretary of the Treasury, with the approval of the President, by order dated November 23, 1917, adopted certain administrative procedure for the executive administration, authority and power vested in the Secretary of the Treasury by said Executive order, dated October 12, 1917, and designated the Federal Reserve Board to act as the agency of the Secretary of the Treasury, subject to the approval of the Secretary of the Treasury, to carry out such executive administration, authority and power vested in the Secretary of the Treasury as hereinbefore recited:

Now, therefore, upon the recommendation of the Secretary of the Treasury, and in order to vest all necessary authority in the Federal Reserve Board to act as the agency of the Secretary of the Treasury, in the performance of the duties hereby imposed upon it, I hereby prescribe the following orders, rules, and regulations in respect of such executive administration, authority and power, and I hereby amend the regulations heretofore prescribed by said Executive order dated September 7, 1917, as herein provided.

DEFINITIONS.

*Person.*—The term person as used herein shall be deemed to mean an individual, partnership, association, company or other unincorporated body of individuals, or corporation or body politic.

*Dealer.*—The term dealer as used herein shall be deemed to mean any person engaged primarily or incidentally in the business (1) of buying, selling, or dealing in foreign exchange, or (2) of buying, selling, or dealing in securities for or through foreign correspondents, or (3) any person who carries accounts or securities with or for foreign correspondents.

*Dealers of Class A.*—Dealers who engage in the business of buying, selling, or dealing in foreign ex-

change, or of buying, selling, or dealing in securities for or through foreign correspondents, and who may or may not carry accounts or securities with or for foreign correspondents shall be known as dealers of Class A.

*Dealers of Class B.*—Dealers who carry accounts or securities with foreign correspondents or who buy, sell or deal in securities through such correspondents but who do not carry accounts or securities for foreign correspondents and who do not engage in the business of buying, selling, or dealing in foreign exchange or of buying, selling, or dealing in securities for foreign correspondents shall be known as dealers of Class B.

*Dealers of Class C.*—Dealers who carry accounts or securities for foreign correspondents or who buy, sell, or deal in securities for such correspondents but who do not carry accounts or securities with foreign correspondents and who do not engage in the business of buying, selling, or dealing in foreign exchange or of buying, selling, or dealing in securities through foreign correspondents shall be known as dealers of Class C.

*Foreign exchange.*—The term foreign exchange as used herein shall be deemed to mean checks, drafts, bills of exchange, cable transfers, or any form of negotiable or assignable instrument, or order used (a) to transfer credit or to order the payment of funds in any foreign country, or (b) to transfer credit or to order the payment of funds within the United States for foreign account.

*Securities.*—The term securities as used herein shall be deemed to mean all evidences of ownership of property not included in the foregoing definition of foreign exchange.

*Correspondent.*—The term correspondent as used herein shall be deemed to mean any person who acts as the agent of, or for, or on behalf of, or as the depositary of, another person, or any person who is the

principal for, or on behalf of, whom another person acts as agent.

*Customer.*—The term customer as used herein shall be deemed to mean any person other than a dealer who buys foreign exchange from a dealer or sells foreign exchange to a dealer.

TRANSACTIONS IN FOREIGN EXCHANGE AND CERTAIN OTHER TRANSACTIONS PROHIBITED EXCEPT AS HEREIN AUTHORIZED.

All transactions in foreign exchange, export or earmarking of gold or silver coin or bullion or currency, transfers of credit in any form (other than credits relating solely to transactions to be extended wholly within the United States) and transfers of evidences of indebtedness or of the ownership of property between the United States and any foreign country, whether enemy, ally of enemy, or otherwise, or between residents of one or more foreign countries, by any person within the United States, except any such transactions or transfers conducted in conformity herewith, are hereby prohibited.

TRANSACTIONS IN FOREIGN EXCHANGE OR IN SECURITIES FOR OR THROUGH FOREIGN ACCOUNT.

*Certain persons required to obtain registration certificates.*—No person, other than a customer, shall, after February 10, 1918, engage in any transaction or make any transfer described in the next preceding subdivision hereof who shall not have obtained, on or before that date, a registration certificate, as hereinafter provided.

Every person who is a dealer upon the date hereof, as promptly as possible and in any event on or before January 31, 1918, shall file, with the Federal Reserve Board, through the Federal Reserve Bank of his district, an application for a registration certifi-

cate. Such application shall be in form approved by the Federal Reserve Board and shall show the character of business engaged in and whether or not an enemy or ally of enemy of the United States or any subject or citizen of an enemy or ally of enemy, wherever resident or domiciled, has any interest directly or indirectly in such business. Such application shall embody an agreement on the part of the applicant to comply with the regulations of the Federal Reserve Board, and to permit the inspection at any time of his books and accounts and to make reports as and when required on forms to be approved by the Federal Reserve Board.

The Federal Reserve Board may issue to such applicant the appropriate registration certificate in form approved by it, entitling the holder to engage in the class or classes of foreign exchange or other transactions specified in such certificate, subject to all applicable provisions of law and to such Executive orders of the President and administrative regulations as shall have been issued or may from time to time be issued by the Federal Reserve Board.

Any person who is not a dealer at the date hereof but who hereafter desires to become a dealer must first obtain a registration certificate.

Any person, other than a customer, who does not desire to become a dealer but who nevertheless desires to engage in one or several transactions or to make one or several transfers described in the next preceding subdivision hereof, may be permitted by the Federal Reserve Board, in its discretion, to engage in any such transaction or to make any such transfer without first obtaining a registration certificate, and the Federal Reserve Board may likewise waive any requirement thereof, other than any which relates to trading with an enemy or ally of enemy, whenever it is satisfied that

such waiver is not incompatible with the best interests of the United States.

Nothing herein shall be construed to abrogate or modify any existing requirement that licenses shall be obtained from the War Trade Board in respect of any transaction with, or for account of, an enemy or ally of enemy, or any person acting for, or on behalf of, or for the benefit of, an enemy or ally of enemy.

*Revocation of registration certificates.*—Any or all such registration certificates may be revoked at any time by direction of the Secretary of the Treasury or of the Federal Reserve Board.

*Books and accounts.*—Each Federal Reserve Bank through which any such registration certificate shall be issued shall furnish, to the applicant, copies of all forms of reports required and the books and records of such applicant shall thereafter be kept in a manner which will make it possible to furnish information called for in such reports without delay.

*General reports.*—After obtaining a registration certificate, each holder thereof shall file with the Federal Reserve Bank through which such certificate shall be issued a report, on forms to be furnished by the Federal Reserve Board, showing all accounts or securities carried with or for foreign correspondents as of the close of business on January 30, 1918, or on such other date as the Federal Reserve Board may require, and such other information as may be called for on such forms and shall thereafter file with the Federal Reserve Board, through such Federal Reserve Bank, on dates specified by the Federal Reserve Board, reports showing all changes in such accounts and all purchases, sales, and other transactions in foreign exchange or securities for or through foreign correspondents.

*Customer's statements.*—A dealer shall require every customer purchasing foreign exchange from him

or selling foreign exchange to him, to file a statement showing the purpose of such purchase or sale with such details as the Federal Reserve Board may require, including a declaration to the effect that no enemy or ally of enemy of the United States has any interest directly or indirectly in such purchase or sale. The Federal Reserve Board shall prescribe the form of such declaration. Copies of such statements shall be furnished by such dealer upon request to the Federal Reserve Board, through the several Federal Reserve Banks.

*Reports made through domestic correspondents.*—Dealers to whom registration certificates have been issued, and who buy, sell, or deal in foreign exchange through domestic correspondents, (for example banking or other institutions located in the United States) unless otherwise directed by the Federal Reserve Board, shall arrange with such correspondents to include such transactions in the reports of such correspondents.

Such dealers will be required to report to the Federal Reserve Board only those foreign exchange transactions which are not included in the reports of such correspondents but may be called upon for any information in regard thereto desired by the Federal Reserve Board, and shall keep all books and records in a manner which will make it possible to furnish such information.

*Special reports.*—Whenever any holder of a registration certificate shall have reason to believe that any transaction within his knowledge involves or may involve directly or indirectly the payment of funds or delivery of securites to or the transfer of credit or securities for the benefit of an enemy, or ally of enemy, or which may involve any other transaction with an enemy or ally of enemy, he shall immediately report the facts and circumstances to the Federal Reserve Board through a Federal Reserve Bank.

*Filing and verification of reports.*—All reports, statements, and declarations herein required, unless otherwise specified, shall be filed with the Federal Reserve Board through the Federal Reserve Banks.

Any or all such reports, statement, or declarations shall, in the discretion of the Federal Reserve Board, be verified by oath of the person making same.

*Examinations.*—The books and records of all dealers must at all times be open to inspection by examiners designated by the Federal Reserve Board.

DECLARATION OF FOREIGN CORRESPONDENT TO BE OBTAINED BY HOLDERS OF REGISTRATION CERTIFICATES.

After dates to be fixed by the Federal Reserve Board in respect of each foreign country, respectively, no holder of a registration certificate shall engage in transactions with, through, or for any foreign correspondent in such foreign country unless he shall have obtained from such correspondent a declaration to the following effect:

"Having arranged with..... to act as the
(Holder of registration certificate.)
agent or correspondent in the United States for, or on behalf of, the undersigned, under regulations issued by the appropriate authorities of the United States Government and/or the undersigned having agreed to act as the foreign correspondent of the said..... I/we do hereby declare that I/we we will not deal or attempt to deal, directly or indirectly, with said agent or correspondent in any transaction for or on account of, or for the benefit of, an enemy or ally of enemy of the United States, and will not make available for the use of an enemy or ally of enemy of the United States any funds or property received or credits established as a result of any transaction engaged in, with, or through said agent or correspondent, and will not

transmit to said agent or correspondent for collection or credit any negotiable instrument bearing the signature or indorsement of an enemy or ally of enemy of the United States.

"The words 'enemy' and 'ally of enemy' are used herein as now or hereafter defined by laws of the United States or by Proclamation of the President of the United States."

NOTE.—If foreign correspondent is incorporated this certificate must be executed by a duly authorized officer of such corporation.

SUSPENSION OF RELATIONS WITH FOREIGN CORRESPONDENTS.

If any foreign correspondent of a dealer in the United States or any person proposing to become the foreign correspondent of a dealer in the United States, shall refuse or fail to make the foregoing declaration as herein required, or if the Federal Reserve Board shall have reason to believe that any such foreign correspondent or any such person is dealing or trading with an enemy or ally of enemy of the United States, contrary to the provisions of the declaration of noninterest of enemies, herein required, or if in the judgment of the Federal Reserve Board the best interest of the United States requires such action, it may prohibit any dealer or dealers in the United States from engaging in any transaction with, through, for, or on behalf of such correspondent or such person.

SUSPENSION OF TRANSACTIONS.

Whenever the Federal Reserve Board shall have reason to believe that any transaction in foreign exchange or any transfer of securities carried with or for a foreign correspondent involves or may involve trading with an enemy, or ally of enemy, or in its judgment is incompatible with the best interest of the United States, it may cause notice to be served on the

parties in interest to postpone the consummation of such transaction for a period of ninety days pending investigation of the facts, and upon investigation if the Federal Reserve Board is of the opinion that the best interests of the United States require such action it may prohibit the consummation of such transaction.

The Secretary of the Treasury may likewise prohibit the consummation of any such transaction by notice served on the parties in interest (either directly or through the Federal Reserve Board) in any case in which in his judgment the best interests of the United States require such action.

SPECIAL PROVISIONS AS TO COLLECTION OF DIVIDENDS, INTEREST, OR MATURING OBLIGATIONS FOR FOREIGN ACCOUNT.

Every person presenting for collection maturing obligations, or coupons, checks or drafts issued for dividends or interest, for account of any foreign Government or person resident in any foreign country, shall make a declaration in form approved by the Federal Reserve Board, to the effect that such collections are not made for, or on behalf of, or for the benefit of, any enemy or ally of enemy; that the proceeds of such collections will not be made available for any enemy or ally of enemy; and that the maturing obligations, or the obligations and stocks upon which dividends or interest are to be paid, are not the property of any enemy or ally of enemy; have not been owned by, or held for the account of, any enemy or ally of enemy, since January 26, 1918, and were not purchased by the present owner from any enemy or ally of enemy or from any person acting for or on behalf of or for the benefit of an enemy or ally of enemy since February 3, 1917.

Provided, however, that any holder of a Class A

or Class C registration certificate may collect maturing obligations and coupons, checks, or drafts issued for dividends or interest for account of a person resident in a foreign country, without making such declaration, if such holder has filed with the Federal Reserve Board a similar declaration executed by the person for whom collection is made.

*Interest or dividend checks payable for foreign account.*—Every person issuing checks or drafts for interest or dividends after January 26, 1918, payable to any foreign Government or to any person resident in a foreign country shall attach to or shall print on the back of such check or draft the following statement:

"This check or draft will not be paid unless the following declaration is executed by the person to whom it is sent for collection by the payee, or his agent, or by the person who acts as the agent in the United States for the payee.

"From actual personal knowledge, or in reliance upon declarations or affidavits furnished the undersigned by the parties in interest, I/we do hereby expressly declare that no enemy or ally of enemy of the United States is directly or indirectly interested in the proceeds of this check or draft and that such proceeds will not be made available for the use of an enemy or ally of enemy of the United States; that the stock upon which this dividend is paid (or the obligation upon which this interest is paid) is not and has not been owned by or held for account of an enemy or ally of enemy of the United States since January 26, 1918, and has not been purchased by the present owner from an enemy or ally of enemy or from a person acting for or on behalf of or for the benefit of an enemy or ally of enemy since February 3, 1917."

DEALINGS IN SECURITIES FOR OR THROUGH FOREIGN ACCOUNT.

No person shall purchase, sell, or deliver any securities for account of any foreign Government, or for account of any person resident in a foreign country, unless such Government or such person, as the case may be, shall have made a declaration, in form approved by the Federal Reserve Board, similar in effect to that required in the case of the collection of maturing obligations, for account of a foreign Government or person resident in a foreign country.

PROCEDURE WHERE DECLARATION OF NONINTEREST OF ENEMY OR ALLY OF ENEMY CAN NOT BE MADE.

Any person who is unable to make a declaration of noninterest of enemy or ally of enemy required hereunder may apply to the Federal Reserve Board for a waiver of such declaration, submitting to such board all facts and circumstances relating to the transaction involved which are in the possession of the applicant. If upon investigation the Federal Reserve Board shall determine that there is no reason to believe that any enemy or ally of enemy is directly or indirectly interested in the transaction involved, and that its consummation will not be incompatible with the best interests of the United States, it may permit the transaction to be consummated without the declaration herein required. If the Federal Reserve Board shall have reason to believe that an enemy or ally of enemy is or may be directly or indirectly interested in the transaction, it shall transmit to the War Trade Board all records in the case for such action as that board may determine to be necessary.

EXPORT AND EARMARKING OF COIN, BULLION, OR CURRENCY.

The following regulations prescribed by Executive order, dated September 7, 1917, shall continue in force as herein amended.

Any person desiring to export from the United States or any of its territorial possessions to any foreign country named in the proclamation dated September 7, 1917, any coin, bullion, or currency, shall first file an application in triplicate with the Federal Reserve Bank of the district in which such person is located for a special or general license. Applications filed must contain statements under oath and showing in detail the nature of the transaction, the amount involved, the parties directly and indirectly interested, and such other information as may be of assistance to the proper authorities in determining whether the exportation for which a license is desired will be compatible with the public interest. All such applications should be made on the standard form prescribed by the Federal Reserve Board.

Each Federal Reserve Bank shall keep a record copy of each application filed with it under the provisions of this regulation and shall forward the original application and a duplicate to the Federal Reserve Board at Washington, together with such information or suggestions as it may believe proper in the circumstances, and shall in addition make a formal recommendation as to whether or not, in its opinion, the exportation should be permitted.

The Federal Reserve Board, subject to the approval of the Secretary of the Treasury, is hereby authorized and empowered, upon receipt of such application and the recommendation of the Federal Reserve Bank, to make such ruling as it may deem proper in the circumstances; and if, in its opinion, the exportation in question be compatible with the public

interest, to permit said exportation to be made; otherwise to refuse it.

No gold or silver coin, or bullion, or currency shall be set aside and earmarked for safekeeping for any person without the written approval of the Federal Reserve Board.

LICENSES FROM WAR TRADE BOARD IN TRANSFORMATION INVOLVING TRADING WITH AN ENEMY OR ALLY OF ENEMY.

Applications to the Federal Reserve Board for permission to export or earmark gold or silver coin bullion or currency shall be accompanied by a certified copy of a license issued by the War Trade Board, whenever any such transactions involve or may involve trading directly or indirectly with an enemy or ally of enemy or with any person acting for, or on behalf of, or for the benefit of, an enemy or ally of enemy.

APPLICATIONS FOR REGISTRATION CERTIFICATES AND EXPORT LICENSES, PROVIDED FOR HEREUNDER, BY PERSONS RESIDING IN ANY DEPENDENCY OF THE UNITED STATES.

Applications to the Federal Reserve Board either for registration certificates or for licenses to export coin, bullion or currency may be made by persons residing in any dependency of the United States (including the Philippine Islands, Alaska, Guam, Hawaii, Porto Rico, Virgin Islands, and Canal Zone) through such agency located in any such dependency as may be hereafter designated by the Federal Reserve Board, instead of through a Federal Reserve Bank; but until an agency has been so designated in any such dependency, persons residing therein may make such applications through any Federal Reserve Bank. The

Federal Reserve Board may from time to time postpone, in respect of any one or more such dependencies, the date on and after which persons residing therein shall be prohibited from engaging in any of the transactions or making any transfer hereinbefore prohibited without having obtained registration certificates, in case such registration certificates can not be obtained on or before the date hereinbefore specified.

WOODROW WILSON.

THE WHITE HOUSE,
26 January, 1918.

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## PLAINTIFF'S EXHIBIT No. 689.

EXECUTIVE ORDER

[No. 2801.]

By virtue of the authority vested in me by an Act to define, regulate, and punish trading with the enemy, approved October 6, 1917, known as the Trading with the Enemy Act, I hereby make the following orders, rules and regulations:

1. Paragraph XXX of the Executive Order dated October 12, 1917, and made by me pursuant to said Act of Congress, is hereby revoked; and in place thereof it is hereby ordered:

XXX. Any person not an enemy, or ally of enemy, who owes to, or holds for or on account of, or on behalf of, or for the benefit of, an enemy or an ally of enemy, not holding a license granted by or in the exercise of the power and authority of the President under the provisions of said Trading with the Enemy Act any money or other property, or to whom any obligation or form of liability to such enemy, or ally of enemy, is presented for payment, may, hav-

ing first obtained the consent of the Alien Property Custodian, pay, convey, transfer, assign, or deliver, to or upon the order of the Alien Property Custodian, said money or other property, with like effect as if such payment, conveyance, transfer, assignment or delivery were made in obedience to requirement pursuant to the provisions of Section 7, subsection (c), of said Trading with the Enemy Act.

2. Paragraph XXXI of said Executive Order dated October 12, 1917, is hereby revoked; and in place thereof it is hereby ordered:

XXXI. I hereby vest in the Alien Property Custodian the executive administration of all provisions of Section 8 (a) and Section 8 (b) of the Trading with the Enemy Act, including the power, authority and duty conferred or imposed upon the President by the provisions of said Section 8 (a), and the notice therein required to be given to the President shall be given to the Alien Property Custodian.

WOODROW WILSON.

THE WHITE HOUSE,
5 February, 1918.

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## PLAINTIFF'S EXHIBIT No. 690.

TRADING WITH THE ENEMY ACT—EXECUTIVE ORDER PRESCRIBING RULES AND REGULATIONS RESPECTING THE EXERCISE OF THE POWERS AND AUTHORITY AND THE PERFORMANCE OF THE DUTIES OF THE ALIEN PROPERTY CUSTODIAN UNDER THE "TRADING WITH THE ENEMY ACT" AND PRIOR EXECUTIVE ORDERS PURSUANT THERETO, AND RESPECTING THE DEPOSIT AND INVESTMENT OF MONEYS RECEIVED BY OR FOR THE ACCOUNT OF THE ALIEN PROPERTY CUSTODIAN.

[No. 2813.]

By virtue of the authority vested in me by "An Act to define, regulate, and punish trading with the

enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," I hereby make the following orders, rules and regulations.

(1) DEFINITIONS.

(a) The word "person," as used herein, shall be deemed to mean an individual, partnership, association, company, or other unincorporated body of individuals, or corporation or body politic.

(b) The word "enemy," as used herein (including subsequent definitions) shall be deemed to mean either an "enemy" or "ally of enemy," as the case may be.

(c) The words "right," "title," "interest," "estate," "power," and "authority" of the enemy, as used herein, shall be deemed to mean respectively such right, title, interest, estate, power, and authority of the enemy as may actually exist and also such as might or would exist if the existing state of war had not occurred, and shall be deemed to include respectively the right, title, interest, estate, power and authority in law or equity or otherwise of any representative of or trustee for the enemy or other person claiming under or in the right of, or for the benefit of, the enemy.

(d) Any requirement made by the Alien Property Custodian pursuant to Section 7, subsection "c" of the "Trading with the enemy act" may be known as and called a demand and will be hereinafter referred to as a demand.

(2) DEMANDS PURSUANT TO SECTION 7 SUBSECTION "C."

(a) The Alien Property Custodian may make demand for the conveyance, transfer, assignment, delivery, and payment of any money or other property owing or belonging to or held for, by, on account of, or on behalf of or for the benefit of an enemy not holding a license granted by me or in the exercise of my power

and authority, which the Alien Property Custodian after investigation shall determine is so owing or so belongs or is so held, together with every right, title, interest, and estate of the enemy in and to such money or other property and every power and authority of the enemy thereover, including (but without limiting the generality of the foregoing) the power and authority to affirm, ratify, approve, revoke, repudiate or disapprove, in whole or in part and at any time or times, any power, agency, trust or other relation at the time existing, and also any act or omission theretofore done in the exercise of or pursuant to any power, agency, trust or other relation which the enemy could or might lawfully revoke, repudiate, disaffirm, affirm, ratify or approve, and also including (but without limiting the generality of the foregoing) the power and authority to direct, supervise, and control the future exercise of any power, agency, trust or other relation over such money or other property to the extent that the enemy could or might lawfuly direct, supervise, and control the same. Or the Alien Property Custodian may qualify or limit any such demand in such manner to such extent as he may in any case see fit and (without limiting the generality of the power to qualify and limit demands) he may in any case demand all or only such power and authority over the money or other property as he may see fit without demanding any conveyance, transfer, assignment, delivery or payment of such money or other property or any other right, title, interest, or estate therein or thereto except such as may be included within the power and authority demanded in the particular case over such money or other property.

A demand for the conveyance, transfer, assignment, delivery and payment of money or other property unless expressly qualified or limited shall be deemed to include every right, title, interest, and

estate of the enemy in and to the money or other property demanded as well as every power and authority of the enemy thereover.

(b) Notice of any demand made by the Alien Property Custodian may be given to any person who, alone or jointly with others, may hold or have the custody or control of or may be exercising any right, power, or authority in or over or may be performing any duty concerning the money or other property mentioned in the demand; and, in any notice given, the Alien Property Custodian may require of the person notified the performance of any act or thing within the power of the person notified which may be necessary or proper to make the demand fully effective, or to establish proper acknowledgment, recognition, or evidence of the right, title, interest, and estate of the Alien Property Custodian in and to such money or other property and of the power and authority of the Alien Property Custodian thereover, and it shall be the duty of any person so notified to perform any act or thing so required. Such notice may be given in person or by mail.

(c) When demand shall be made and notice thereof given, as hereinbefore provided, such demand and notice shall forthwith vest in the Alien Property Custodian such right, title, interest, and estate in and to and possession of the money or other property demanded and such power or authority thereover as may be included within the demand, and the Alien Property Custodian may thereupon proceed to administer such money and other property in accordance with the provisions of the "Trading with the enemy Act" and with any orders, rules, or regulations heretofore, hereby, or hereafter made by me or heretofore or hereafter made by the Alien Property Custodian.

(3) POWERS OF ADMINISTRATION.

(a) The Alien Property Custodian may appoint and clothe with necessary power and authority such agents, bailees, and attorneys in fact as he may find to be necessary or proper to carry out the provisions of the "Trading with the enemy act" and the Executive orders, rules, and regulations heretofore, hereby, or hereafter made, and prescribe the duties and fix the compensation of such agents, bailees, and attorneys in fact; and any depositary designated by the Alien Property Custodian may be appointed as such agent, bailee or attorney in fact. And the Alien Property Custodian may require bonds of such agents, bailees and attorneys in fact and fix the penalty and conditions thereof.

(b) The Alien Property Custodian may pay all reasonable and proper expenses which may be incurred in or about securing possession or control of money or other property and in or about collecting dividends, interest, and other income therefrom, and in otherwise protecting and administering the same. So far as may be, all such expenses shall be paid out of, and in any event recorded as a charge against, the estate to which such money or other property belongs.

(c) The Alien Property Custodian may authorize depositaries designated by him and agents, bailees, and attorneys in fact appointed by him to deduct all expenses authorized or approved by the Alien Property Custodian, including the compensation of such depositaries, agents, bailees, and attorneys in fact, from any moneys collected by them and the payment by them to the Alien Property Custodian or into the Treasury of the United States of the net amount remaining in their hands.

(d) The Alien Property Custodian may exercise any right, power, or authority of the enemy in, to and over corporate stock, shares or certificates representing beneficial interests owing or belonging to or held for, by, on account of, or on behalf of or for the benefit of an enemy, including (1) the right to receive all notices issued by the corporation, unincorporated association, company or trustee which issues such stock, shares or certificates, to the holders or owners of similar stock, shares or certificates, (2) the right to exercise all voting power appertaining to such stock, shares or certificates, and (3) the right to receive all subscription rights, dividends and other distributions and payments, whether of capital or income, declared or made on account of such stock, shares or certificates, regardless of whether or not such stock, shares or certificates be in the possession of the Alien Property Custodian and regardless of whether or not such stock, shares or certificates have been transferred to the Alien Property Custodian upon the books of the corporation, association, company or trustee issuing the same.

The Alien Property Custodian may nominate persons who may, when duly elected or appointed, serve as directors, officers or employees of any corporation whose corporate stock or shares, in whole or in part, are owing or belonging to, or are held for, by, on account of, or on behalf of or for the benefit of an enemy.

The Alien Property Custodian may demand the transfer of corporate stock, shares or certificates representing beneficial interests to be made upon the books of any corporation, unincorporated association, company or trustee, issuing the same, into the name of the Alien Property Custodian or into the name of any depositary designated by the Alien Property Custodian for the account of the Alien Property Cus-

todian, or in the case of corporate stock or shares, into the name of any other person for the purpose of qualifying such person to serve as a director of the corporation issuing such corporate stock or shares; and it shall be the duty of any corporation, unincorporated association, company, or trustee to comply with such demand when accompanied by the presentation of the certificates which represent such corporate stock, shares or beneficial interest. Provided, that corporate stock or shares transferred into the name of any other person than the Alien Property Custodian or a designated depositary shall be indorsed by such person in blank and delivered to and held by the Alien Property Custodian or by a duly designated depositary.

(e) In respect of moneys, accounts payable, credits, notes or other obligations owing or belonging to or held for, by, on account of, or on behalf of or for the benefit of an enemy, whether the payment or delivery or the mere transfer and assignment thereof be demanded, the Alien Property Custodian may exercise discretion in enforcing payment, granting indulgence, making extension or accepting security, and in exercising any other right, power or authority of the enemy.

(f) The Alien Property Custodian may sell and deliver any commodity or other tangible property which may be perishable or which may in the preservation thereof involve expense. And the Alien Property Custodian may sell and deliver any rights appurtenant to the ownership of corporate stock, shares or certificates of beneficial interests in cases where such rights would lapse unless exercised within a limited time. The Alien Property Custodian may manage, conduct, and operate any business belonging to or held for, by, on account of, or on behalf of or for the bene-

fit of an enemy in cases where the continuation of such business may seem to be necessary to prevent waste or to protect such business. And the Alien Property Custodian may sell or otherwise dispose of such business or any part thereof, or the assets or any part thereof, whenever such sale shall seem to be necessary to prevent waste or to protect such business. And in the management, operation, conduct, sale or other disposition of such business the Alien Property Custodian may exercise every right, power and authority of the enemy.

(g) In cases of liquidation of an estate belonging to a partnership, association or unincorporated company in which an enemy may have an interest, the Alien Property Custodian may exercise every right, power, and authority of the enemy, including the right, power, and authority to sell the interest of the enemy in the event such sale seems necessary to prevent waste or to protect such interest.

(h) All sales made by the Alien Property Custodian may be conducted privately or publicly, with or without advertisement, and on such terms and conditions as to the Alien Property Custodian may seem proper.

In all cases of sales made by the Alien Property Custodian, all reasonable expenses incurred in and about such sales shall be deducted from the proceeds and the net amount remaining paid into the Treasury of the United States.

(i) The Alien Property Custodian is authorized to exercise any power conferred upon him by any license issued by me or in the exercise of the power and authority conferred upon me under the "Trading with the enemy Act" wherever such license involves any act or thing concerning any money or

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other property owing or belonging to or held for, by, on account of, or on behalf of or for the benefit of an enemy.

(4) STATUTORY POWERS OF THE ALIEN PROPERTY CUSTODIAN.

Nothing herein contained is intended, nor shall anything herein contained be construed, to limit the powers conferred upon the Alien Property Custodian by the "Trading with the enemy Act."

(5) DEPOSIT AND INVESTMENT OF MONEYS RECEIVED BY THE ALIEN PROPERTY CUSTODIAN.

There shall be deposited in the Treasury of the United States, through the office of the Secretary of the Treasury—

(a) Any and all moneys (including checks and drafts payable on demand) paid to or received by the Alien Property Custodian pursuant to the "Trading with the enemy Act."

(b) Any and all moneys (including checks and drafts payable on demand) collected or received by the Alien Property Custodian, as dividends or interest or income that may become due upon any stocks, bonds, notes, time drafts, time bills of exchange, or other securities or property held by the Alien Property Custodian or by any depositary or depositaries designated as provided in said Act for the account of the Alien Property Custodian.

(c) Any and all moneys collected as the proceeds of any and all maturing obligations held by the Alien Property Custodian or by any such depositary or depositaries for the account of the Alien Property Custodian; and

(d) Any and all moneys paid to or received by the Alien Property Custodian as the proceeds of any sale or sales, made at any time pursuant to such rules and regulations as the President shall prescribe, of any and all property or rights which shall come into the possession of the Alien Property Custodian in pursuance of the provisions of said act:

*Provided, however,* That the Alien Property Custodian may fix stated periods, not longer than quarter-yearly, for accounting by depositaries, agents, bailees, and attorneys in fact of all moneys received by them, and for the payment thereof by such depositaries, agents, bailees, and attorneys in fact to the Alien Property Custodian, who shall forthwith pay the same into the Treasury of the United States, as provided above, and that checks and drafts payable on demand received by the designated depositaries in payment of dividends, interest and income property held by or for the account of the Alien Property Custodian may be collected by such depositaries for the account of the Alien Property Custodian, but that all other checks and drafts payable on demand shall be forthwith deposited by the Alien Property Custodian in the Treasury of the United States, as provided above.

Any and all moneys so deposited in the Treasury of the United States, as herein provided, as well as all moneys, if any, which may be paid to the Treasurer of the United States, as provided in section 12 of said act, and all interest, dividends or other income, if any, in respect of any property conveyed, transferred, assigned or delivered to the Treasurer of the United States, as provided in said section 12, shall be credited by the Treasurer of the United States to the Secretary of the Treasury "for account of the Alien Property Custodian."

Any and all money so deposited in the Treasury of the United States, as herein provided, together with any interest or income received from the investment thereof, shall be subject to withdrawal by the Secretary of the Treasury for the purpose of making any payment or payments pursuant to the provisions of said act, and, until so withdrawn, may be invested and reinvested, from time to time, by the Secretary of the Treasury in United States bonds or United States certificates of indebtedness. The bonds and certificates of indebtedness, in which such moneys shall be so invested, shall be held by the Secretary of the Treasury for account of the Alien Property Custodian, subject to the provisions hereof and of said act and to such further orders, rules or regulations as may, from time to time, be prescribed by me.

(6) AMENDMENTS AND MODIFICATIONS OF PRIOR EXECUTIVE ORDERS.

All other Executive orders heretofore made are hereby amended and modified to such extent as may be necessary to conform with the provisions hereof.

WOODROW WILSON.

THE WHITE HOUSE,
26 February, 1918.

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## PLAINTIFF'S EXHIBIT No. 691.

EXECUTIVE ORDER CONCERNING CERTAIN SALES TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2832.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the

enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian may sell at private sale, without public or other advertisement, any live stock, feed or food stuffs, hides and other animal products, agricultural products, fertilizers, chemicals, drugs, essential oils, lumber, cotton, tobacco, furniture, books, glass and china ware, wearing apparel, jewelry, precious stones, pictures, ornaments, bric-a-brac, objects of art, raw or finished textile materials, trunks, boxes, casks and containers of all kinds, partially or completely manufactured metals, fabrics or other articles, rubber and rubber products, and all kinds of merchandise, in lots having a market value at the time and place of sale not exceeding Ten Thousand Dollars ($10,000) per lot. Any such sale may be conducted at the place where such property, or the greater portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his authorized agent, may seem proper.

My reasons for the foregoing determination, order, rule and regulation are:

(*a*) The properties described in the lots mentioned are not customarily sold and cannot usually be sold to advantage either at public sale after public or other advertisement, or at the place where such properties, or the greater portion thereof, are situated.

(*b*) The sales hereby authorized may be made at the time and place of favorable demand, and upon

such terms and conditions as may be necessary to secure the market price.

(*c*) Unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
2 April, 1918.

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## PLAINTIFF'S EXHIBIT No. 692.

EXECUTIVE ORDER REVOKING POWER AND AUTHORITY IN DESIGNATED OFFICERS UNDER THE TRADING WITH THE ENEMY ACT.

[No. 2837.]

By virtue of the power and authority vested in me by "An Act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, I hereby make the following orders and rules and regulations:

SECRETARY OF THE TREASURY.

I. I hereby revoke the authority and power vested in the Secretary of the Treasury by Section XI of the Executive Order of October 12, 1917, to issue licenses to send, take or transmit out of the United States any letter or other writing, book, map, plan or other paper, picture, or any telegram, cablegram, or wireless message, or other form of communication intended for or to be delivered, directly or indirectly, to an enemy or ally of enemy, in any way relating to letters patent, or registration of trade-mark, print, label, or copyright, or to any applications therefor; and no such license shall be granted until further order.

FEDERAL TRADE COMMISSION.

II. I hereby revoke the power and authority vested in the Federal Trade Commission by Section XVII of the Executive Order of October 12, 1917, to issue licenses to any citizen of the United States or any corporation organized within the United States, to file or prosecute applications in the country of an enemy or ally of enemy for letters patent or for registration of trade-mark, print, label or copyright, and to pay any fees or agents' fees in connection therewith; or to pay to any enemy or ally of enemy any tax, annuity or fee in relation to patents, trade-marks, prints, labels and copyrights; and no such license shall be granted until further order.

WOODROW WILSON.

THE WHITE HOUSE,
11 April, 1918.

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## PLAINTIFF'S EXHIBIT No. 693.

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2847.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule, and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, the following property, to wit:

200 bales, more or less, of cotton: property of Paul Schmitz, Bremen, Germany; same now being stored in Warehouse 341 of the New York Dock Company, Brooklyn, New York.

Such sale may be made in one or more lots and may be conducted at the place where the property, or the major portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his duly authorized agent may seem proper.

My reasons for the foregoing determination, order, rule, and regulation are:

(a) That the property described is not customarily sold and can not usually be sold to advantage either at public sale after public or other advertisement, or at the place where such property, or the greater portion thereof, is situated.

(b) That the United States Government having assumed jurisdiction and control over the docks at which it would be necessary to conduct the public sale of the property described, if public sale were required, and by reason of the congestion of the said docks and the immediate necessity for space thereon, further detention of the said property, which would be rendered necessary by the delays incident to public sale thereof is impracticable and inadvisable.

(c) That unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
24 April, 1918.

## PLAINTIFF'S EXHIBIT No. 694.

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2845.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, the following property, to wit:

20 hogsheads, more or less, of tobacco: property of W. F. Fallenstein, Bremen, Germany: same having been taken off the German bark *Metador*, and now stored in General Stores, New York City, under the control of the United States Treasury Department.

Such sale may be made in one or more lots and may be conducted at the place where the property, or the major portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his duly authorized agent may seem proper.

My reasons for the foregoing determination, order, rule and regulation are:

(a) That the property described is not customarily sold and cannot usually be sold to advantage either at public sale after public or other advertisement, or at the place where such property, or the greater portion thereof, is situated.

(b) That the United States Government having assumed jurisdiction and control over the docks at which it would be necessary to conduct the public sale of the property described, if public sale were required, and by reason of the congestion of the said docks and the immediate necessity for space thereon, further detention of the said property, which would be rendered necessary by the delays incident to public sale thereof, is impracticable and inadvisable.

(c) That unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
24 April, 1918.

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## PLAINTIFF'S EXHIBIT No. 695.

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2844.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies

in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, the following property, to wit:

105 hogsheads, more or less, of tobacco: property of Ad. Hagens and Company, Bremen, Germany: same having been taken off the German bark *Metador*, and now stored in General Stores, New York City, under the control of the United States Treasury Department.

Such sale may be made in one or more lots and may be conducted at the place where the property, or the major portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his duly authorized agent may seem proper.

My reasons for the foregoing determination, order, rule and regulation are:

(a) That the property described is not customarily sold and cannot usually be sold to advantage either at public sale after public or other advertisement, or at the place where such property, or the greater portion thereof, is situated.

(b) That the United States government having assumed jurisdiction and control over the docks at which it would be necessary to conduct the public sale of the property described, if public sale were required, and by reason of the congestion of the said docks and the immediate necessity for space thereon, further detention of the said property, which would be rendered necessary by the delays incident to public sale thereof, is impracticable and inadvisable.

(c) That unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
24 April, 1918.

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## PLAINTIFF'S EXHIBIT No. 696.

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2843.]

By virtue of the authority vested in me by "An Act to define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale without public or other advertisement, the following property, to wit:

50 hogsheads, more or less, of tobacco: property of Schilling and Burning, Bremen, Germany: same having been taken off the German Bark *Metador* and now stored in General Stores, New York City, under the control of the United States Treasury Department.

Such sale may be made in one or more lots and may be conducted at the place where the property, or

the major portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his duly authorized agent, may seem proper.

My reasons for the foregoing determination, order, rule and regulation are:

(a) That the property described is not customarily sold and cannot usually be sold to advantage either at public sale after public or other advertisement or at the place where such property, or the greater portion thereof, is situated.

(b) That the United States government having assumed jurisdiction and control over the docks at which it would be necessary to conduct the public sale of the property described, if public sale were required, and by reason of the congestion of the said docks and the immediate necessity for space thereon, further detention of the said property, which would be rendered necessary by the delays incident to public sale thereof, is impracticable and inadvisable.

(c) That unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
24 April, 1918.

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## PLAINTIFF'S EXHIBIT No. 697.

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2857.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6,

1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, the following property, to wit:

> 100 hogsheads, more or less, of tobacco; property of Schilling and Bruning, Bremen, Germany; same having been taken off the German bark *Metador*, and now stored in General Stores, New York City, under the control of the United States Treasury Department.

Such sale may be made in one or more lots, and may be conducted at the place where the property, or the major portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his duly authorized agent, may seem proper.

My reasons for the foregoing determination, order, rule and regulations are:

(a) That the property described is not customarily sold and cannot usually be sold to advantage either at public sale after public or other advertisement, or at the place where such property, or the greater portion thereof, is situated.

(b) That the United States Government having assumed jurisdiction and control over the docks at which it would be necessary to conduct the public sale of the property described, if public sale were required, and by reason of the congestion of the said docks and

the immediate necessity for space thereon, further detention of the said property, which would be rendered necessary by the delays incident to public sale thereof, is impracticable and inadvisable.

(c) That unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
7 May, 1918.

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**PLAINTIFF'S EXHIBIT No. 698.**

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2858.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule, and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, the following property, to wit:

279,232 pounds, more or less, of nickel; property of Hammar and Company, Hamburg, Germany, Hammar and Company, Ltd., Stock-

holm, Sweden, and other enemies unknown; same now being in the possession of the American Dock Company, Tompkinsville, Staten Island, New York.

Such sale may be made in one or more lots and may be conducted at the place where the property, or the major portion thereof, is situated, or elsewhere, and upon such terms and conditions as to the Alien Property Custodian, or his duly authorized agent may seem proper.

My reasons for the foregoing determination, order, rule and regulation are:

(a) That the property described is not customarily sold and cannot usually be sold to advantage either at public sale after public or other advertisement, or at the place where such property, or the greater portion thereof, is situated.

(b) That the property described may be sold to such manufacturers as may be designated by the Ordnance Department of the War Department for war purposes, and therefore for direct utilization by the United States Government.

(c) That unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
9 May, 1918.

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**PLAINTIFF'S EXHIBIT No. 699.**

EXECUTIVE ORDER.
[No. 2877.]

Whereas, in order to avoid confusion in policies, duplication of effort, and conflicting interpretations

of the law, unity of control in the administration of the legal affairs of the Federal Government is obviously essential, and has been so recognized by the acts of Congress creating and regulating the Department of Justice;

Now, therefore, I, Woodrow Wilson, President of the United States, by virtue of the authority vested in me as Chief Executive and by the act "authorizing the President to coordinate or consolidate executive bureaus, agencies and offices, and for other purposes, in the interest of economy and the more efficient concentration of the Government," approved May 20, 1918, do hereby order that all law officers of the Government excepting those in the Philippine Islands, including all law officers attached to any executive bureau, agency or office specially created for the prosecution of the existing war, shall "exercise their functions under the supervision and control of the head of the Department of Justice," in like manner as is now provided by law with respect to the Solicitors for the principal Executive Departments and similar officers; that all litigation in which the United States or any Department, executive bureau, agency or office thereof, are engaged shall be conducted under the supervision and control of the head of the Department of Justice; and that any opinion or ruling by the Attorney General upon any question of law arising in any Department, executive bureau, agency or office shall be treated as binding upon all departments, bureaus, agencies or offices therewith concerned. This Order shall not be construed as affecting the jurisdiction exercised under authority of existing law by the Comptroller of the Treasury and the Judge Advocates General of the Army and Navy.

WOODROW WILSON.

THE WHITE HOUSE,
31 May, 1918.

## PLAINTIFF'S EXHIBIT No. 700.

EXECUTIVE ORDER WITH RESPECT TO ORENSTEIN AND KOPPEL-ARTHUR KOPPEL ACTIENGESELLSCHAFT COMMONLY KNOWN AS ORENSTEIN-KOPPEL COMPANY.

[No. 2885.]

By virtue of the authority vested in me by "An Act to define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," as amended by "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and eighteen, and prior fiscal years, on account of war expenses and for other purposes," approved March 28, 1918, I hereby make the following determination, and orders, rules, and regulations.

1. I do determine hereby, after investigation, that Orenstein and Koppel-Arthur Koppel Actiengesellschaft is an enemy not holding a license granted by the President within the purview of said "Trading with the enemy Act" as amended and the proclamations and Executive orders issued in pursuance thereof, and that all and singular the property and assets of every kind, character, and description held by or in the name of Koppel Land Company, Beaver Connecting Railroad Company, Koppel Water Company, Pennsylvania Car and Manufacturing Company, Orenstein-Arthur Koppel Company, a corporation of the Commonwealth of Pennsylvania, Universal Railway Products Company, and Koppel Sales Company belong to and are held for, by, on account of, on behalf of, and for the benefit of said Orenstein and Koppel-Arthur Koppel Actiengesellschaft.

2. The Alien Property Custodian, duly qualified and acting under the provisions of said "Trading with the enemy Act" as amended, and the proclamations

and Executive orders issued in pursuance thereof, shall have power and he is authorized and directed to hold, manage, administer, protect, preserve, control, and sell or otherwise dispose of in accordance with the following rules and regulations, any and all property, other than money, which has been or shall be conveyed, transferred, assigned, delivered, and/or paid over to him as the property of said Orenstein and Koppel-Arthur Koppel Actiengesellschaft, pursuant to the provisions of the "Trading with the enemy Act," as amended, and the proclamations and Executive orders issued pursuant thereto, or which has been or shall be required so to be.

(a) The Alien Property Custodian and depositaries for him under his direction and control and within the limits of the authority granted by him to them, shall have the power and authority to do any and all things reasonable and proper in or about or for the custody, management, administration, protection, preservation and control of any such property according to the nature and character of the property and the attendant circumstances including (but without limiting the generality of the foregoing) the power and authority to collect all bills, notes, accounts, dividends, interest, rents, royalties, annuities and other receivables, and income and profits and accumulations and distributions of principal or income; to pay rents, royalties, interest and other accounts and liens or charges; to make repairs, additions and alterations to property, whether real or personal; to rent, lease or otherwise grant the use or right to use or occupy property of any kind; to insure property against loss, and to cancel and surrender insurance policies and collect return premiums and surrender values, and to do any other act or thing in or about insurance or insurance policies; to grant by lease, license or other-

wise, the right to use, or other rights, under or with respect of patents, copyrights, trade marks, trade secrets and other similar rights; to vote shares of stock or other beneficial interest in corporations, unincorporated associations, companies or trusts upon any questions at all times and upon all matters upon which any owner of such stock or other beneficial interest shall have the right to vote, and as the holder of such shares of stock or other beneficial interest to vote for or against and to take part in any sale, dissolution, consolidation, amalgamation or reorganization of any sort, of any such corporation, unincorporated association, company or trust, or of its assets or any part thereof, and to exercise any rights or privileges that may be or become appurtenant to the ownership of such stock or other beneficial interest with like force and effect and under like circumstances in all respects as though the absolute owner thereof; to give any notices and file any papers or writings of any kind proper or necessary for the creation, perfection, protection, liquidation or otherwise in respect of any claims, demands, choses in action or other rights of any kind and to settle, compromise and adjust claims, demands, choses in action or other rights; to intervene in any suit or proceeding before any court, board, Commission or other body and to file and maintain claims, demands and suits of all kinds in or before any court, board, commission or other body; to determine and pay all reasonable and proper expenses incurred in or about or with respect of the exercise of any of the powers and authority vested in the Alien Property Custodian or any depositary for him, including expenses that may be incurred in or about securing possession, custody or control of any such property, and including also taxes and other charges heretofore or hereafter lawfully assessed upon or

against such property by any body politic; provided that this shall not be construed to authorize the payment of any stamp or other taxes upon or on account of conveyance, transfer, assignment or delivery of property to the Alien Property Custodian or any depositary or nominee for him; and provided further that this shall not in any way affect the power of the Commissioner of Internal Revenue or any regulations made by him or under his authority.

(b) Whenever such property or any part or parcel thereof is or shall be held or retained adversely to the Alien Property Custodian or to any requirement of or concerning such property made by the Alien Property Custodian, or under any claim of lien, charge or incumbrance, the Alien Property Custodian may compromise or settle such controversy or claim as though he were the absolute owner thereof, in any way he shall decide proper; and he shall have the power and authority to make any payment or payments necessary, and to execute and deliver any instrument or writings necessary or proper to effect or evidence the same.

(c) Whenever any such property or any part thereof shall be used or employed in the conduct or other operation of a mine, plant, factory, railroad or other transportation facility, warehouse, mercantile or trading establishment or any sort of a going business or undertaking, the Alien Property Custodian may continue the conduct or other operation of such business or undertaking; and for such purpose he shall have the right, power and authority to employ and discharge agents, attorneys, servants and other employees; to buy and sell supplies, materials and commodities required or necessary for the conduct of such business, or dealt in or handled thereby, or mined, produced, manufactured or created by it; to

take out insurance; to require money owing by banks, trust companies or other depositaries on special or general deposit to be paid to the Alien Property Custodian or upon his order; to collect debts and other receivables owing to the said business or undertaking or to the former enemy owner or owners thereof and created out of or by the operation of such business or undertaking, and also debts, accounts and other receivables accruing or arising out of the conduct or other operation of such business or undertaking, by the Alien Property Custodian or under his direction or authority; to pay the wages and salaries of agents, attorneys, servants and other employees; and rents, royalties, and other current accounts and liabilities; to intervene in any suit or action pending in any court or before any board, commission or other body, in which such business or undertaking or any of the property or assets thereof shall be involved or concerned and to prosecute or defend, as the case may be; to file, prosecute and maintain any claim or suit in the name of the Alien Property Custodian or of any manager or managers appointed by him as hereinafter provided, or otherwise, arising out of or based upon transactions had prior or subsequent to the time when such property was conveyed, transferred, assigned, delivered or paid over to the Alien Property Custodian or was required so to be, growing out of the conduct or operation of such business or undertaking or any other use, custody, control or management of any property or assets thereof; and generally to manage, administer, preserve, conduct, operate and control such business or undertaking and any or all parts or parcels and assets thereof as though the absolute owner or owners thereof, either in the name of the Alien Property Custodian or otherwise as he shall determine.

(d) The Alien Property Custodian may appoint a manager or managers who, under his direction and control and within the limits of the authority conferred by him, shall be authorized and directed to hold, manage, administer, protect, preserve, and otherwise control such property or any part or parcel thereof; and any manager or managers thus appointed shall be authorized and directed to continue the conduct or other operation of any going business or other undertaking which the Alien Property Custodian himself, as provided elsewhere herein, could continue. Such manager or managers either generally or specially as the Alien Property Custodian shall from time to time determine and order or authorize, shall have and exercise the rights, powers and authority conferred upon him or them by the Alien Property Custodian; and such rights, powers, and authority may be enlarged, restricted or revoked by the Alien Property Custodian at any time and without giving any notice or reason therefor. The remuneration of all such managers shall be fixed by the Alien Property Custodian and may be increased or reduced at any time.

(e) The Alien Property Custodian shall have the right to sell or otherwise dispose of any or all of such property whenever in his opinion such sale or other disposition is in the public interest; and such property may be sold or otherwise disposed of in such parcel or parcels as he shall determine. Any property when sold, except when sold to the United States, shall be sold at public sale to the highest bidder, after public advertisement of the time and place of sale, which time shall be when the Custodian shall determine and which place shall be on the premises at the plant of said Orenstein and Koppel-Arthur Koppel Actiengesellschaft at Koppel, Beaver County, Pennsylvania. The Alien Property Custodian, upon

the order of the President stating the reasons therefor, shall have the right to reject all bids and resell such property at public sale or otherwise as the President may direct; but the Alien Property Custodian may at or before any sale, by public announcement or by publication fix a period after the expiration of which the right thus to reject all bids and to resell such property will not be exercised. Such property shall be sold only to American citizens, provided that any corporation incorporated within or under the authority of the laws of any State or Territory of the United States shall be considered for such purposes an American citizen; but the Alien Property Custodian shall have the right to exclude from such bidding any corporation which he shall, after investigation, determine to be controlled, managed or operated by, for, on account of, on behalf of or for the benefit of an enemy or enemies, and/or to exclude any such corporation from purchasing or otherwise acquiring any of such property from him.

(f) The Alien Property Custodian shall have full power and discretion with respect to the sale of such property and may sell the same as an entirety or may sell any and all parts thereof in such groups or parcels and at such time or times as he shall determine. He may sell any of such property used or employed in the conduct or operation of any mine, plant, factory, railroad or other transportation facility, mercantile establishment, or any sort of going business or undertaking as a going business or undertaking and may include not only the tangible property but any and all patents, trade marks, trade names, good will and other intangible rights and assets.

(g) The Alien Property Custodian may sell such property and any and all parts and parcels thereof for cash or upon credit; and in the latter event, such

security for the payment of that portion of the purchase price remaining unpaid may be taken as he shall deem proper in the premises. He shall be authorized to set a minimum or upset price on any property offered for sale by him, and to fix and prescribe the terms and conditions upon which bids will be received, and to determine, generally or specially, qualifications to be met by persons offering to bid; to require deposits from prospective bidders; to determine, generally or specially, the nature and extent of information concerning any property or properties offered or to be offered for sale, which shall be given prospective bidders, and the inspection thereof which shall be allowed; to have made auditor's reports, and appraisals of property or properties offered or to be offered for sale, and generally to make and establish, generally or specially, terms and conditions to govern any or all sales to be made by him. Any property or properties thus sold may be sold subject to or free from any or all debts, claims and liabilities of all kinds created or arising out of or in respect of any such property or properties or the conduct or other operation of any such business or other undertaking; and subject to or free from liens, charges or incumbrances; and payment thereof and of all expenses of such sale or sales may be made out of the proceeds from such sales or sale, or may be required to be made or assumed by the purchaser, as the Alien Property Custodian shall determine.

(h) All costs and expenses, including repairs made, taxes or other charges paid, remuneration of any and all depositaries, agents, and managers and all payments of every kind made by the Alien Property Custodian or under his authority, and all claims, rights and demands of every kind, character and description, based upon or arising out of the custody, management, administration, preservation, con-

trol and sale or other disposition of property by the Alien Property Custodian or under his authority, shall be limited to and enforced against and paid or satisfied out of only the property or business or undertaking out of which, on account of which, or in respect of which said costs, charges, expenses, claim right or demand shall have arisen or been created; provided that whenever such property or the income therefrom shall be insufficient for such purpose, same may be paid out of other moneys or properties required or received from or on account of the said enemy, all of such payments, however, being charged against the property on account of which or in respect of which same shall be made. Insofar as possible, all such payments shall be made out of income from or profits arising from or out of such property or going business or undertaking before the corpus thereof shall be used for such purpose. Neither the Alien Property Custodian nor any agent or manager appointed by him shall be liable personally for any debt or other obligation of any kind or character owing, created, or growing out of or in any other way arising from any such property or the custody, management, administration, protection, preservation, control and/or sale or other disposition thereof and/or from the conduct or other operation of any going business or undertaking; and in no event and under no circumstances shall the Alien Property Custodian or any agent or manager appointed by him be liable to any one for, or on account of, anything done or omitted in or about or in respect of any such property or the control or other operation of any such going business or other undertaking except in cases of intentional injury or fraudulent misconduct by the person attempted to be charged with such liability.

(i) The Alien Property Custodian and depositar-

ies, agents and managers for him, within the limits of the authority granted by him, shall have the power and authority to do any and all things reasonable or proper in or about or in respect of the exercise of any of the powers and authority specifically granted above, and in addition are hereby authorized and directed to manage all such property and to do any act or things in respect thereof or make any disposition thereof or any part thereof by sale or otherwise and exercise any rights or powers which may be or become appurtenant thereto or to the ownership thereof, in like manner as though the Alien Property Custodian were the absolute owner thereof, subject to no limitation or restrictions other than those specifically set forth herein or in said "Trading with the enemy Act" as amended or any prior Executive orders issued pursuant thereto not in conflict herewith.

My reasons in the public interest for the foregoing determinations, and rules and regulations are that they are necessary to enable the Alien Property Custodian to perform the duties imposed upon him and to exercise the powers and authority granted to him with respect to said Orenstein and Koppel-Arthur Koppel Actiengesellschaft, and any and all properties belonging to or held by, for, on account of, on behalf of, or for the benefit of said enemy, properly and effectively.

WOODROW WILSON.

THE WHITE HOUSE,
15 June, 1918.

## PLAINTIFF'S EXHIBIT No. 701.

EXECUTIVE ORDER AMENDING THE EXECUTIVE ORDER OF OCTOBER 12, 1917, TO PROVIDE FOR A REPRESENTATIVE OF THE WAR INDUSTRIES BOARD ON THE WAR TRADE BOARD.

[No. 2940.]

By virtue of the authority vested in me by "An Act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, and by Title VII of the act approved June 15, 1917, entitled "An act to punish acts of interference with the foreign relations, the neutrality and the foreign commerce of the United States, to punish espionage and better to enforce the criminal laws of the United States and for other purposes," I do hereby amend the order of October 12, 1917, vesting power and authority in designated officers and establishing the War Trade Board, composed of representatives, respectively, of the Secretary of State, of the Secretary of the Treasury, of the Secretary of Agriculture, of the Secretary of Commerce, of the Food Administrator, and of the United States Shipping Board, by changing Paragraph I of said order to read as follows:

"I. I hereby establish a War Trade Board to be composed of representatives, respectively, of the Secretary of State, of the Secretary of the Treasury, of the Secretary of Agriculture, of the Secretary of Commerce, of the Food Administrator, of the United States Shipping Board, and of the War Industries Board."

The order of October 12, 1917, as so amended is hereby confirmed and continued, and all orders and proclamations heretofore issued vesting power and authority in the War Trade Board are hereby con-

firmed and made applicable to the War Trade Board constituted in accordance with this order.

WOODROW WILSON.

THE WHITE HOUSE,
20 August, 1918.

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## PLAINTIFF'S EXHIBIT No. 702.

EXECUTIVE ORDER CONCERNING CERTAIN SALES TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2949.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian may sell at private sale, without public or other advertisement, any seats upon or memberships in, any stock, cotton, grain, produce, or other exchanges incorporated or organized and existing anywhere within the United States as defined in the "Trading with the enemy Act;" and any such sale or sales may be made and conducted wherever and upon such terms and conditions as the Alien Property Custodian or his authorized agent shall determine.

My reasons, in the public interest, for the foregoing determination, order, rule and regulation are:

(a) The methods required by law and the character of said property to be pursued in the sale thereof are such that the power of sale vested in the Alien Property Custodian cannot be exercised effectively except at private sale; in that such seats upon or memberships in said exchanges can be purchased only by persons who are already members of said exchange or who are approved by said exchange according to its Constitution and By-Laws, and such seats upon or memberships in said exchanges can be sold and transferred therefore only to persons who are members of, or who are approved by the exchange the seat upon or membership in which is the subject matter of sale.

(b) The sales hereby authorized may be made at the time and place of most favorable demand and upon such terms and conditions as may be necessary to secure the best market price.

(c) Unnecessary expense, delay and inconvenience may be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
29 August, 1918.

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## PLAINTIFF'S EXHIBIT No. 703.

EXECUTIVE ORDER AUTHORIZING THE ALIEN PROPERTY CUSTODIAN TO SELL CERTAIN PROPERTY AT PRIVATE SALE.

[No. 2953.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act,"

and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, certain real estate now being held and administered by him as such Custodian, and heretofore, upon requirement by him, conveyed, transferred, assigned, and delivered to him as the property of Lilly Busch, whom he did after investigation determine to be an enemy, within the purview of the said Act as amended, described as follows, to wit:

Beginning at a point in the westerly line of Northern Avenue as the same is now legally established distant One Hundred and Seventy-eight (178) feet and twenty-four one-hundredths (.24) of a foot northwardly from the corner formed by the intersection of said westerly line of Northern Avenue with the northerly line of West 181st Street; running thence westerly in a straight line which on its southerly side makes an angle of 87 degrees 54 minutes and 52 seconds with said westerly line of Northern Avenue, One Hundred and Ninety-six (196) feet and fifty-three one-hundredths (.53) of a foot; thence in a straight line still running westwardly but bearing to the north and making an angle on its northerly side with said last mentioned straight line of 151 degrees 3 minutes and 30 seconds, One Hundred Sixty-one (161) feet and sixty-seven one-hundredths (.67) of a foot to the easterly line of Riverside Drive at a point therein distant Two Hundred and Three (203) feet and ninety one-hundredths (.90) of a foot northwardly measured along the easterly line of said Drive from the corner formed

by the intersection of the said easterly line of Riverside Drive with the northerly line of W. 181st Street aforesaid; thence northwardly along the easterly line of Riverside Drive on a curve to the left having a radius of Three Hundred and Seventy-five (375) feet, Thirty-nine (39) feet and six hundred fifty-eight one-thousandths (.658) of a foot to a point of tangency in said easterly line of said Drive; thence still northwardly along the easterly line of said Drive on a line tangent to said curve of Three Hundred Seventy-five (375) feet radius, one Hundred Forty-seven (147) feet and two hundred thirty-eight one-thousandths (.238) of a foot to a point of curve in said easterly line of said Drive; thence still northwardly along the said easterly line of said Drive on a curve to the right having a radius of Three Hundred Ten (310) feet, Eighty-two (82) feet and Eight Hundred twenty-four one-thousandths (.824) of a foot to a point of tangency in said easterly line of said Drive; thence still northwardly along said easterly line of said Drive on a line tangent to said curve of Three Hundred Ten (310) feet radius Sixteen (16) feet and three hundred and two one-thousandths (.302) of a foot to a point in said easterly line of said Drive, said point being the intersection of the easterly line of said Riverside Drive with the northerly "record" line of the property described herein; thence easterwardly in a straight line which on its southerly side makes an angle of Eighty-seven (87) degrees thirty-seven (37) minutes and twenty-seven and six-tenths (27.6) seconds with said easterly line of Riverside Drive, Five (5) feet and three hundred twelve one-thousandths (.312) of a foot to an angle point in the aforesaid record line; thence in a straight line still running eastwardly but bearing to the north and making an angle on its southerly side with said last mentioned straight line of one hundred eighty-six (186) degrees thirty-eight (38) minutes and sixteen

(16) seconds, Two Hundred Ninety-two (292) feet and seventy-three one-hundredths (.73) of a foot to a point in the westerly line of Northern Avenue as the same is now legally established; said point being distant Four Hundred Twenty-one (421) feet and seven one-hundredths (.07) of a foot northwardly from the corner formed by the intersection of said westerly line of Northern Avenue with the northerly line of West 181st Street; running thence southwardly along the west line of said Northern Avenue Two Hundred Forty-two (242) feet and eighty-three one-hundredths (.83) of a foot to the point or place of beginning, (references hereinbefore made to Riverside Drive and 181st Street are intended to designate the same as existing on and before March 14, 1910); excepting therefrom Twenty-two Hundred and Four and three-tenths (2204.3) feet, more or less, the area of square feet taken by the City of New York in a condemnation proceeding, as more particularly described on the Damage Map approved by the Board of Estimate and Apportionment on or about July 2, 1914, and approved by the Commissioners of Assessment on or about April 13, 1915; together with (but without warranty with respect thereto) all strips or gores of land, if any, owned by party of the first part adjacent to said premises.

Subject to all and singular the covenants and restrictions contained in deeds recorded in Liber 370 of Conveyances at page 40, Liber 411 of Conveyances at page 332, Liber 369 of Conveyances at page 252, and Liber 531 of Conveyances at page 264, and variations between the fences and retaining walls and the record lines on south. (As shown on survey made by Earl B. Lovell, dated August 9, 1909.)

And including in the premises hereby conveyed all right, title and interest of party of the first part in and to any land lying in the bed of any street, road, or avenue opened or proposed in front of or adjoining said premises, and except as to the award for the ex-

cepted premises hereinabove referred to taken by the city in said condemnation proceedings, all of the right, title and interest of party of the first part in and to any award for damage to said premises by reason of change of grade of any street.

Situated in the City of New York and State of New York.

My reasons for the foregoing determination, order, rule, and regulation, are:

(a) The said Lilly Busch has filed with said Alien Property Custodian her petition pursuant to the provisions of section 9 of said "Trading with the enemy Act," asking that said property be returned to her, and because of the pendency of said petition said property can not be sold at public sale;

(b) An offer for the purchase of said real estate has been made heretofore, and is now pending, but said offer, if accepted, must be accepted at once;

(c) Said proposed sale is an advantageous one, and said Lilly Busch has consented in writing that said sale be made, and it is for the best interest of the United States, and of all persons who are or may be interested in said property, that the same be sold at once.

WOODROW WILSON.

THE WHITE HOUSE,
12 September, 1918.

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**PLAINTIFF'S EXHIBIT No. 704.**

EXECUTIVE ORDER VESTING POWER AND AUTHORITY IN A DESIGNATED OFFICIAL OR HIS SUCCESSORS IN OFFICE, SUBJECT TO THE SUPERVISION OF THE ALIEN PROPERTY CUSTODIAN.

[No. 2959.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the

enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments to such Act, embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, I hereby, in the public interest make the following determination and order:

I hereby vest in the Managing Director of the Alien Property Custodian in the Philippine Islands, and his successors in office, to be hereafter appointed by the Alien Property Custodian, all of the rights, powers, and authorities with respect to property rights, titles, and interests in the Philippine Islands, heretofore or hereafter vested in or conferred upon the Alien Property Custodian by me under Executive Order dated October 12, 1917, and all other Executive Orders heretofore or hereafter signed by me, subject, however, to the control, supervision and direction of the Alien Property Custodian at all times.

WOODROW WILSON.

THE WHITE HOUSE,
13 September, 1918.

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## PLAINTIFF'S EXHIBIT No. 705.

EXECUTIVE ORDER CANCELLING SALE OF "HELIOS" CIGAR FACTORY, PART OF GERMANN & COMPANY, INC., MADE TO WALTER E. OLSEN AND COMPANY, BY THE ALIEN PROPERTY CUSTODIAN'S REPRESENTATIVE, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2958.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the

enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28th, 1918, and all other powers and authorities me hereto enabling, I hereby, in the public interest, make the following determination and order:

Whereas, A. Mitchell Palmer, Alien Property Custodian, has reported to me that a certain property known as the "Helios" Cigar Factory, part of Germann & Company, Inc., was offered for sale at Manila, in the Philippines, by Francis Burton Harrison, the Custodian's representative in the Philippines, on May 1st, 1918, and the said property was bid in by Walter E. Olsen & Company, on May 7th, 1918, and that the said sale was not advertised or conducted in accordance with rules and regulations prescribed by me, as required by the said "Trading with the enemy Act," as amended, nor in accordance with the instructions and policies of A. Mitchell Palmer, Alien Property Custodian, and that he has therefor disapproved the said sale;

Now, therefore, I hereby declare the said sale to be void and of no effect, and I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said Walter E. Olsen & Company.

My reasons for the foregoing determination and order are:

(1) The short notice given of the sale, and inadequate opportunity for purchasers to inform and prepare themselves to bid.

(2) The exclusion of the public from the sale,

which deprived it of the public character required by the aforesaid Act of Congress as amended.

(3) The advertised conditions of the sale excluded American corporations who are legally entitled to bid, and contained several objectionable details.

(4) The sale was not made under the rules and regulations prescribed by me and as required by said Act as amended, and not in accordance with the instructions and policies of the Alien Property Custodian.

WOODROW WILSON.

THE WHITE HOUSE,
13 September, 1918.

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## PLAINTIFF'S EXHIBIT No. 706.

EXECUTIVE ORDER CANCELLING SALE OF PART OF A. RICHTER & COMPANY, KNOWN AS "EL SIGLO" MADE TO LORZA & LOZANO BY THE ALIEN PROPERTY CUSTODIAN'S REPRESENTATIVE PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2956.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28th, 1918, and all other powers and authorities me hereto enabling, I hereby, in the public interest, make the following determination and order:

Whereas, A Mitchell Palmer, Alien Property Custodian, has reported to me that a certain property known as "El Siglo" part of A. Richter & Company, was offered for sale at Manila, in the Philippines, by Francis Burton Harrison, the Custodian's representative in the Philippines, on March 21, 1918, and the said property was bid in by Lorza & Lozano, on April 1, 1918, and that the said sale was not advertised or conducted in accordance with rules and regulations prescribed by me, as required by the said "Trading with the enemy Act," as amended, nor in accordance with the instructions and policies of A. Mitchell Palmer, Alien Property Custodian, and that he has therefore disapproved the said sale;

Now, therefore, I hereby declare the said sale to be void and of no effect, and I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said Lorza and Lozano.

My reasons for the foregoing determination and order are:

(1) That by the powers granted me under said Act of Congress, and by the Executive Order issued by me on October 12th, 1917, to the War Trade Board; and by the license granted by the said War Trade Board, "El Siglo" part of A. Richter & Company, should have been liquidated under said license and by the party designated in said license, and not sold by the Alien Property Custodian's representative.

(2) That on the date of the advertisement, even if the Alien Property Custodian had the power to take over the above mentioned property, there was no authority in law to sell the same either at public or private sale.

(3) The selling of the property by sealed bids.

(4) The advertised conditions of the sale excluded

American corporations who are legally entitled to bid, and contained several objectionable details.

(5) The sale was not made under the rules and regulations prescribed by me and as required by said Act as amended, and not in accordance with the instructions and policies of the Alien Property Custodian.

WOODROW WILSON.

THE WHITE HOUSE,
13 September, 1918.

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## PLAINTIFF'S EXHIBIT No. 707.

EXECUTIVE ORDER CANCELLING SALE OF PART OF GERMANN & COMPANY, LTD., INC., MADE TO THE OXY-ACETYLENE WELDING & CUTTING COMPANY, CHANGED TO PHILIPPINE ENGINEERING COMPANY, INC., BY THE ALIEN PROPERTY CUSTODIAN'S REPRESENTATIVE PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2955.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28th, 1918, and all other powers and authorities me hereto enabling, I hereby, in the public interest, make the following determination and order:

Whereas, A. Mitchell Palmer, Alien Property Custodian, has reported to me that a certain property known as the Engineering Department of Germann and

Company, Ltd., Inc., was offered for sale at Manila, in the Philippines, by Francis Burton Harrison, the Custodian's representative in the Philippines, on May 1st, 1918, and the said property was bid in by Oxy-Acetylene Welding and Cutting Company, changed to Philippine Engineering Company, Inc., on May 13th, 1918, and that the said sale was not advertised or conducted in accordance with rules and regulations prescribed by me, as required by the said "Trading with the enemy Act," as amended, nor in accordance with the instructions and policies of A. Mitchell Palmer, Alien Property Custodian, and that he has therefore disapproved the said sale;

Now, therefore, I hereby declare the said sale to be void and of no effect, and I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said Oxy-Acetylene Welding and Cutting Company.

My reasons for the foregoing determination and order are:

(1) The short notice given of the sale and inadequate opportunity for purchasers to inform and prepare themselves to bid.

(2) The exclusion of the public from the sale, which deprived it of the public character required by the aforesaid Act of Congress as amended.

(3) The advertised conditions of the sale excluded American corporations who are legally entitled to bid, and contained several objectionable details.

(4) The sale was not made under the rules and regulations prescribed by me and as required by said Act as amended, and not in accordance with the instructions and policies of the Alien Property Custodian.

WOODROW WILSON.

THE WHITE HOUSE,
13 September, 1918.

## PLAINTIFF'S EXHIBIT No. 708.

EXECUTIVE ORDER CANCELLING SALE OF FROEHLICH AND KUTTNER MADE TO COMPANIA MERCANTIL DE FILIPINAS BY THE ALIEN PROPERTY CUSTODIAN'S REPRESENTATIVE PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2954.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28th, 1918, and all other powers and authorities me hereto enabling, I hereby, in the public interest, make the following determination and order:

Whereas, A. Mitchell Palmer, Alien Property Custodian, has reported to me that a certain property known as Froehlich & Kuttner, was offered for sale at Manila, in the Philippines, by Francis Burton Harrison, the Custodian's representative in the Philippines, on May 1st, 1918, and the said property was bid in by Compania Mercantil de Filipinas, on May 10th, 1918, and that the said sale was not advertised or conducted in accordance with rules and regulations prescribed by me, as required by the said "Trading with the enemy Act," as amended, nor in accordance with the instructions and policies of A. Mitchell Palmer, Alien Property Custodian, and that he has therefore disapproved the said sale;

Now, therefore, I hereby declare the said sale to

be void and of no effect, and I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said Compania Mercantil de Filipinas.

My reasons for the foregoing determination and order are:

(1) That by the powers granted me under said Act of Congress, and by the Executive Order issued by me on October 12th, 1917, to the War Trade Board; and by the license granted by the said War Trade Board, the firm of Froehlich and Kuttner should have been liquidated under said license and by the party designated in said license, and not sold by the Alien Property Custodian's representative.

(2) That, even if the Alien Property Custodian's representative had had the power to sell and liquidate said firm, that not sufficient notice or adequate opportunity was granted to purchasers to inform and prepare themselves to bid.

(3) The exclusion of the public from the sale, which deprived it of the public character required by the aforesaid Act of Congress as amended.

(4) The advertised conditions of the sale excluded American corporations who are legally entitled to bid, and contained several objectionable details.

(5) The sale was not made under the rules and regulations prescribed by me and as required by said Act as amended, and not in accordance with the instructions and policies of the Alien Property Custodian.

WOODROW WILSON.

THE WHITE HOUSE,
13 September, 1918.

## PLAINTIFF'S EXHIBIT No. 709.

AN EXECUTIVE ORDER CANCELLING SALE OF PART OF A. RICHTER & COMPANY, KNOWN AS "LA SOMBRERIA" MADE TO E. P. BRIAS Y ROXAS BY THE ALIEN PROPERTY CUSTODIAN'S REPRESENTATIVE PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2957.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28th, 1918, and all other powers and authorities me hereto enabling, I hereby, in the public interest, make the following determination and order:

Whereas, A. Mitchell Palmer, Alien Property Custodian, has reported to me that a certain property known as "La Sombreria" part of A. Richter & Company, was offered for sale at Manila, in the Philippines, by Francis Burton Harrison, the custodian's representative in the Philippines, on March 21, 1918, and the said property was bid in by E. P. Brias y Roxas, on April 1, 1918, and that the said sale was not advertised or conducted in accordance with rules and regulations prescribed by me, as required by the said "Trading with the enemy Act," as amended, nor in accordance with the instructions and policies of A. Mitchell Palmer, Alien Property Custodian, and that he has therefore disapproved the said sale;

Now, therefore. I hereby declare the said sale to be void and of no effect, and I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said E. P. Brias y Roxas.

My reasons for the foregoing determination and order are:

(1) That by the powers granted me under said act of Congress, and by the Executive order issued by me on October 12, 1917, to the War Trade Board; and by the license granted by the said War Trade Board, the La Sombreria, part of A. Richter & Company, should have been liquidated under said license and by the party designated in said license, and not sold by the Alien Property Custodian's representative.

(2) That on the date of the advertisement, even if the Alien Property Custodian had the power to take over the above-mentioned property, there was no authority in law to sell the same either at public or private sale.

(3) The selling of the property by sealed bids.

(4) The advertised conditions of the sale excluded American corporations who are legally entitled to bid, and contained several objectionable details.

(5) The sale was not made under the rules and regulations prescribed by me and as required by said act as amended, and not in accordance with the instructions and policies of the Alien Property Custodian.

WOODROW WILSON.

THE WHITE HOUSE,
13 September, 1918.

## PLAINTIFF'S EXHIBIT No. 710.

AN EXECUTIVE ORDER REJECTING THE BID OF THEODORE FRIEDEBURG OF $145,000 FOR THE PROPERTY OF THE PARTNERSHIP OF A. W. FABER, OFFERED FOR SALE AT PUBLIC AUCTION ON SEPTEMBER 17, 1918, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

[No. 2968.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," and the amendments thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28th, 1918, and all other powers and authorities me hereto enabling, make the following determination and order:

Whereas, A. Mitchell Palmer, Alien Property Custodian, has reported to me that certain property formerly the property of A. W. Faber, a partnership heretofore doing business in the United States, with its main plant at Newark, New Jersey, and heretofore composed of Count Alexander von Faber-Castell and Countess Ottilie von Faber-Castell as copartners, was offered for sale to the highest bidder at public auction on September 17, 1918, at eleven o'clock a. m., at which sale the highest bid received for the said property was the sum of $145,000, made by Theodore Friedeburg, and that the said bid is not considered by the Alien Property Custodian an adequate price for the said property, and that he has therefore disapproved the said sale.

Now, therefore, I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said Theodore Friedeburg, and to resell such property at public sale, as if said sale had not occurred.

My reasons for the foregoing determination and order are:

That the price bid for the said property by the said Theodore Friedeburg, to wit, the sum of $145,000, is inadequate, and not the fair market value of the property.

WOODROW WILSON.

THE WHITE HOUSE,
30 September, 1918.

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## PLAINTIFF'S EXHIBIT No. 711.

EXECUTIVE ORDER PRESCRIBING ADDITIONAL RULES AND REGULATIONS, AND MAKING CERTAIN DETERMINATIONS RESPECTING THE EXERCISE OF THE POWERS AND AUTHORITY AND THE PERFORMANCE OF THE DUTIES OF THE ALIEN PROPERTY CUSTODIAN.

[No. 2991.]

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," as amended, I hereby make the following orders, rules and regulations, and determinations.

DEFINITIONS.

1. The words "Insurance Company" as used herein shall be deemed to mean a Partnership, Association, Mutual Company, Branch, General Agency

whether incorporated or unincorporated, group of individual underwriters, corporation or body politic whose business in whole or in part consists of insurance or underwriting in any one or more of its branches.

2. The word "enemy" as used herein, shall be deemed to mean either an "enemy" or "ally of enemy" as the case may be.

POWERS OF MANAGEMENT AND ADMINISTRATION, INCLUDING SALE OR OTHER DISPOSITION.

The Alien Property Custodian shall have power, and he is authorized and directed, to hold, manage, administer, protect, preserve, control, and to re-insure or retrocede, and to sell or otherwise dispose of, in accordance with the following rules and regulations, any and all property, other than money, of any insurance company heretofore doing business within the United States which has been or shall be conveyed, transferred, assigned, delivered, and/or paid over to him pursuant to the provisions of the "Trading with the enemy Act" as amended, and the proclamations and Executive orders issued in pursuance thereof, or which has been or shall be required so to be conveyed, transferred, assigned, delivered, and/or paid over to him, or which shall be seized by him.

1. The Alien Property Custodian shall have the power and authority to do any and all things reasonable and proper in or about the taking over, custody, management, administration, protection, preservation and control of such business, property and assets, including (but without limiting the generality of the foregoing) the power and authority to collect all premiums, commissions, agency balances, bills, notes, accounts, dividends, interest, rents and other receivables, and income and profits and accumulations and distri-

bution of principal or income; to pay all leases, claims, premiums, adjustment charges, rents, interest and other accounts and liens or charges; to vote in person or by proxy shares of stock or other beneficial interest in corporations, unincorporated associations, companies or trusts upon any questions at all times and upon all matters upon which any owner of such stock or other beneficial interest shall have the right to vote, including the power and authority to vote for or against and to take part in any sale, dissolution, consolidation, amalgamation or reorganization of any sort, of any such corporation, unincorporated association, company or trust, or of its assets or any part thereof, and to exercise any rights or privileges that may be or become appurtenant to the ownership of such stock or other beneficial interest with like force and effect and under like circumstances in all respects as though the absolute owner thereof; to give any notices and file any papers or writings of any kind, proper or necessary for the creation, perfection, protection, liquidation or otherwise in respect of any claims, demands, choses in action or other rights of any kind, and to settle, compromise and adjust claims, demands and choses in action; to intervene in any suit or proceeding and to file and maintain claims, demands and suits of all kinds in or before, any court, board, commission or other body; to determine and pay all reasonable and proper expenses incurred in or about or with respect of the exercise of any of the powers and authority vested in the Alien Property Custodian or any depositary for him, including expenses that may be incurred in or about securing possession, custody or control of any such property, and including also taxes and other charges heretofore or hereafter lawfully assessed upon or against such property, by any body politic, provided that this shall not be construed to require the payment of any stamp or other taxes upon

or on account of conveyance, transfer, assignment or delivery of property to the Alien Property Custodian or to any agent, attorney, bailee, nominee or depositary for him; and provided further that this shall not in any way affect the power of the Commissioner of Internal Revenue or any regulations made by him or under his authority.

2. Whenever any such property or any part or parcel thereof is or shall be subjected to any claim of lien, charge or incumbrance, or is or shall be held or retained adversely to the Alien Property Custodian or to any requirement with respect to such property made by him, the Alien Property Custodian may compromise or settle such controversy and pay any such claim in any way that he shall decide to be proper and as though he were the absolute owner of the property involved; and he shall have the power and authority to make any payment or payments necessary and to execute and deliver any instruments or writings necessary and proper to effect or evidence the same.

3. Whenever any such property or any part or parcel thereof shall constitute part of, or have been used in the conduct of, the business of any such insurance company, the Alien Property Custodian, in addition to the rights, powers and authority elsewhere herein conferred upon him in respect of such property, may continue the conduct or other operation of the business of such insurance company conducted anywhere within the United States prior thereto by, or for, such company; and for such purpose, the Alien Property Custodian shall have the right, power and authority to employ and discharge managers, agents, attorneys, servants and other employees, to effect insurance and reinsurance, to issue policies, certificates, or other contracts of insurance

or reinsurance; to adjust, compromise, settle and pay claims of every kind arising in connection with such business; to require money owing by insurance companies, banks, trustees, trust companies, state or municipal officers, or other depositaries on special or general deposit to be paid by him or upon his order; to collect debts, premiums, commissions, dues, assessments and other receivables owing to the said business or to the former enemy owner or owners thereof and created out of or by the operation of such business, and also debts, accounts and other receivables accruing or arising out of the conduct or other operation or such business or undertaking, by the Alien Property Custodian or under his direction or authority; to pay the wages and salaries of managers, agents, attorneys, servants and other employees, and rents, and current accounts and other liabilities; to intervene in any suit or action pending in any court or before any board, commission or other body, in which such business or any of the property or assets thereof shall be involved or concerned and to prosecute or defend, as the case may be; to file, prosecute and maintain in the name of the Alien Property Custodian or otherwise as may be proper, any claim or suit arising out of or based upon transactions had prior or subsequent to the time when such business or property was demanded or taken over by the Alien Property Custodian, but growing out of the conduct or operation of such business or any other use, custody, or management of any property or assets thereof; and generally, to manage, administer, preserve, conduct, operate and control such business and any or all parts or parcels and assets thereof as though the absolute owner, either in the name of the Alien Property Custodian or otherwise as he shall determine.

4. The Alien Property Custodian may appoint agents, attorneys, bailees, depositaries, liquidators and/or managers who under his direction and control within the limits of the authority conferred by him, shall be authorized and directed to hold, manage, administer, protect, preserve and otherwise control the business, property and assets demanded and taken over by him, or any part or parcel thereof; and they may be authorized and directed to continue the conduct of such business which the Alien Property Custodian himself as provided elsewhere herein, could continue. Such agents, attorneys, bailees, depositaries, liquidators and managers shall have and exercise the rights powers and authority which shall be from time to time conferred upon him or them by the Alien Property Custodian; and such rights, powers and authority may be enlarged, restricted or revoked by the Alien Property Custodian at any time and without giving any notice or reason therefor, and the remuneration of all such agents, attorneys, bailees, depositaries, liquidators and managers shall be fixed by the Alien Property Custodian and may be increased or reduced at any time.

5. The Alien Property Custodian shall have full power and discretion with respect to the business, property and assets of any insurance company which has been or shall be conveyed, transferred, assigned, delivered or paid over to him, or required so to be, or which has been or shall be seized by him, and may liquidate, reinsure or retrocede, or sell or otherwise dispose of in accordance with the provisions of said "Trading with the enemy Act" as amended, the said business in whole or in part at such times and upon such terms as he may determine, and may devote so much of the property and assets of such insurance company in his possession or under his control or subject to his demand as shall be necessary to effect such

reinsurance or retrocession. Where the business is reinsured in whole or in part, such reinsurance shall be effected only in insurance companies incorporated within and under the authority of the laws of the United States, or of any State or Territory of the United States.

6. The Alien Property Custodian shall have the power, in and about the conduct of such business and of its liquidation, retrocession and/or reinsurance to sell at private sale, without public or other advertisement any stocks, beneficial interests in stocks, including voting trust certificates and all other rights appurtenant to the ownership of stocks, bonds, negotiable instruments or evidences of indebtedness, and maps, in parcels, lots or quantities having a market value at the time of sale not exceeding ten thousand dollars ($10,000) for each parcel, lot, or quantity sold. Any such sale may be conducted at such place and upon such terms and conditions as to the Alien Property Custodian, or his authorized agent may seem proper. The reasons in the public interest for the foregoing determination, order, rule and regulation are:

(a) The properties above described can not usually be sold to the best advantage at public sale after public or other advertisement.

(b) The sales hereby authorized may be made at the time and place of most favorable demand, and upon such terms and conditions as may be necessary to secure the best market price.

(c) Unnecessary expense, delay and inconvenience may be avoided.

EFFECT UPON THE STATUTORY POWERS OF THE ALIEN PROPERTY CUSTODIAN AND UPON PRIOR EXECUTIVE ORDERS.

1. Nothing herein contained shall limit or shall be construed to limit, in any way, the rights, powers and

authority conferred upon the Alien Property Custodian by the "Trading with the enemy Act" and the amendments thereto and the Executive orders heretofore issued pursuant thereto.

2. All Executive orders heretofore made are amended and modified hereby to such an extent as may be necessary to conform with the provisions hereof; but with this exception, all of such orders in force and effect at the time this order is issued are expressly ratified and continued in full force and effect.

WOODROW WILSON.

THE WHITE HOUSE,
12 November, 1918.

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**PLAINTIFF'S EXHIBIT No. 712.**

EXECUTIVE ORDER.

I hereby vest in the Attorney General all power and authority conferred upon me by section 9 of the Act approved October 6, 1917, known as the "Trading with the Enemy Act," as amended by the Act entitled "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years, and for other purposes," approved July 11, 1919.

WOODROW WILSON.

THE WHITE HOUSE,
15 July, 1919.

hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

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## PLAINTIFF'S EXHIBIT No. 714.

EXECUTIVE ORDER REJECTING THE BID OF G. VINTSCHGER FOR CERTAIN SHARES OF THE CAPITAL STOCK OF EMIL GEBEL COMPANY, A NEW YORK CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JUNE 20, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment thereto embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas the Alien Property Custodian offered for sale at public sale to the highest bidder in the City of New York, State of New York at 3:00 p. m. on the 20th day of June, 1919, certain shares of the capital

stock of Emil Gebel Company, a New York Corporation, said shares being described as follows:

Item I. 100 shares of Preferred Stock (out of a total of 300 shares outstanding, of the par value of $100 each), the same being evidenced by certificates A12 and A13, issued to the Alien Property Custodian.

Item II. 137 shares of Common Stock (out of a total of 300 shares outstanding, of the par value of $100 each) the same being evidenced by certificates 22, 23 and 24, issued to the Alien Property Custodian.

Whereas, the highest bid received for said stock was $237.00 for the entire 100 shares preferred and 137 shares common, which bid was made by G. Vintschger.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at the said sale, including the bid of the said G. Vintschger, and to re-sell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 18th day of July in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

## PLAINTIFF'S EXHIBIT No. 715.

EXECUTIVE ORDER REJECTING THE BID OF G. VINTSCHGER FOR CERTAIN SHARES OF THE CAPITAL STOCK OF MARKT AND SCHAEFER COMPANY, A NEW JERSEY CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JUNE 20, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such Act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of New York, State of New York at 2.30 p. m. on the 20th day of June, 1919, certain shares of the capital stock of Markt and Schaefer Company, a New Jersey Corporation, said shares being described as follows:

Item I. 460 shares of Preferred Stock (out of a total of 1,250 shares outstanding, of the par par value of $100 each), the same being evi-

denced by certificates 13 and 14, issued to the Alien Property Custodian.

Item II. 216 shares of Common Stock (out of a total of 1,250 shares outstanding, of the par value of $100 each), the same being evidenced by certificates 75 and 76, issued to the Alien Property Custodian.

And whereas, the highest bid received for said stock was $47,320.00, being $32,200.00 for Item I, and $15,120.00 for Item II, which bid was made by G. Vintschger.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said G. Vintschger, and to re-sell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 18th day of July in the year of our Lord One thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

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## PLAINTIFF'S EXHIBIT No. 716.

EXECUTIVE ORDER REJECTING THE BID OF PAUL WENZEL FOR CERTAIN SHARES OF THE CAPITAL STOCK OF CHICAGO CARBONIC GAS COMPANY, AN ILLINOIS CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JUNE 23, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT", AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the

Enemy, and for other purposes", approved October 6, 1917, known as the "Trading with the Enemy Act", and the amendment to such act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes", approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes", approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of Chicago, State of Illinois, at 11.30 o'clock a. m. on the 23rd day of June, 1919, certain shares of the capital stock of Chicago Carbonic Gas Company, an Illinois corporation, said shares being described as follows:

> 100 shares of the common capital stock of the Chicago Carbonic Gas Company, a corporation of the State of Illinois, out of a total issue of 300 shares of the par value of $100 each.

And whereas, the highest bid received for said stock was twenty thousand ($20,000) dollars for the entire one hundred shares offered, which bid was made by Paul Wenzel.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said Paul Wenzel, and to re-sell such property at public sale.

My reason for the foregoing determination and

order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 19th day of July in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred and forty-fourth.

WOODROW WILSON.

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## PLAINTIFF'S EXHIBIT No. 717.

EXECUTIVE ORDER REJECTING THE BID OF MASON C. SHOUP, R. P. SHOUP, AND O. E. DIGAN FOR CERTAIN SHARES OF THE CAPITAL STOCK OF REGNIER AND SHOUP MERCANTILE COMPANY, A MISSOURI CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JUNE 10, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling,

I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of St. Joseph, State of Missouri, at 11.00 o'clock A. M. on the 10th day of June, 1919, certain shares of the capital stock of Regnier and Shoup Mercantile Company, a Missouri corporation, said shares being described as follows:

> 230 shares of the common capital stock of the Regnier and Shoup Mercantile Company, a corporation of the State of Misouri, out of a total of 1,000 shares outstanding of the par value of $100 each.

And whereas, the highest bid received for said stock was ten thousand three-hundred and fifty ($10,350.00) dollars for the entire stock offered, which bid was made by Mason C. Shoup, R. P. Shoup, and O. E. Digan.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said Mason C. Shoup, R. P. Shoup, and O. E. Digan, and to re-sell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 24th day of July in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

## PLAINTIFF'S EXHIBIT No. 718.

EXECUTIVE ORDER REJECTING THE BID OF BAUSCH AND LOMB OPTICAL COMPANY FOR CERTAIN SHARES OF THE CAPITAL STOCK OF C. P. GOERZ AMERICAN OPTICAL COMPANY, A NEW YORK CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JUNE 25, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of New York, State of New York, at 3:00 o'clock P. M. on the 25th day of June, 1919, certain shares of the capital stock and other property of C. P. Goerz American Optical Company, a New York corporation, said shares and other property being described as follows:

1. 549 shares of the common capital stock of C. P. Goerz American Optical Company, a New York corporation, of the par value of $100 each, out of a total of 600 shares of the common capital stock of said corporation, all of which are issued and outstanding. The said 549 shares being identified as follows:

1 share standing in the name of A. Mitchell Palmer, as Alien Property Custodian, Trust No. 3480, and evidenced by certificate No. 14. Said share formerly stood in the name of Hans Tauscher and was evidenced by Certificate No. 7, which has been cancelled on the books of the Company.

548 shares standing in the name of A. Mitchell Palmer, as Alien Property Custodian, Trust No. 665, and evidenced by certificate No. 12. Said shares formerly stood in the name of Optische Anstalt C. P. Goerz Aktiengesellschaft, and were evidenced by certificates Nos. 8 and 9 for 2 shares and 546 shares respectively, which said certificates have been surrendered and cancelled.

2. Patents identified as follows:

| Patent No. | Date of Issue | Title. |
|---|---|---|
| 781,233 | January 21, 1905 | Prism support for use with optical instruments. |
| 886,739 | May 5, 1908 | Device for focusing photographic cameras. |
| 738,402 | September 8, 1903 | Shutter for photographic objectives. |
| 745,550 | December 1, 1903 | Photographic objective. |
| 777,320 | December 13, 1904 | Photographic objective. |
| 784,487 | March 7, 1905 | Tangent-scale telescope for guns. |
| 813,935 | February 27, 1906 | Automatic recording device. |
| 829,121 | August 21, 1906 | Telescope for submarine and submergible boats. |
| 831,350 | September 18, 1906 | Telescope with refracted optical axis. |

| Patent No. | Date of Issue | Title. |
|---|---|---|
| 833,916 | October 23, 1906 | Roller blind for photographic cameras. |
| 836,273 | November 20, 1906 | Prism telescope. |
| 879,572 | February 18, 1908 | Telescope with displaceable reversing system. |
| 881,127 | March 10, 1908 | Instrument for optically measuring distances. |
| 881,590 | March 10, 1908 | Mounting of sighting telescopes. |
| 882,762 | March 24, 1908 | Panoramic telescope. |
| 886,722 | May 5, 1908 | Telescope. |
| 892,781 | July 7, 1908 | Angle-measuring instrument with telescopes. |
| 898,653 | September 15, 1908 | Prismatic double telescope. |
| 902,822 | November 3, 1908 | Folding photographic camera. |
| 904,066 | November 17, 1908 | Prism telescope and similar prism-carrying device and means for adjusting the prisms. |
| 1,160,614 | November 16, 1915 | Distance-measuring instrument. |
| 1,160,615 | November 16, 1915 | Aiming device. |
| 1,236,722 | August 14, 1917 | Optical system of variable magnification. |
| 1,247,185 | November 20, 1917 | Distance-measuring instrument. |
| 1,196,116 | August 29, 1916 | Folding camera. |
| 1,199,238 | September 26, 1916 | Photographic plate holder. |
| 1,209,958 | December 26, 1916 | Panoramic telescope. |
| 564,216 | July 21, 1896 | Photographic shutter. |
| 648,123 | April 24, 1900 | Telescope tripod. |
| 677,460 | July 2, 1901 | Photographic magazine camera. |
| 687,373 | November 26, 1901 | Focal adjustment for binocular optical instruments. |
| 695,638 | March 18, 1902 | Magazine plate-holder. |
| 695,639 | March 18, 1902 | Photographic roll holder. |
| 704,320 | July 8, 1902 | Folding camera with roll-film magazine. |
| 706,650 | August 12, 1902 | Astigmatically corrected wide-angle objective. |
| 706,651 | August 12, 1902 | Magazine plate holder. |
| 709,480 | September 23, 1902 | Folding stereoscopic camera. |
| 709,898 | September 30, 1902 | Binocular prism telescope. |
| 877,499 | January 28, 1908 | Device for successively exposing sensitive sheets. |
| 599,700 | March 1, 1898 | Combined lens for photographic purposes. |
| 635,472 | October 24, 1899 | Photographic objective. |
| 635,473 | October 24, 1899 | Three-lens system for photographic purposes. |

| Patent No. | Date of Issue. | Title. |
|---|---|---|
| 1,060,902 | May 6, 1913 | Base-line telemeter. |
| 1,066,906 | July 8, 1913 | Distance-measuring instrument. |
| 1,066,955 | July 8, 1913 | Magazine plate holder and film pack therefor. |
| 1,067,027 | July 8, 1915 | Telemeter. |
| 1,085,611 | February 3, 1914 | Annular mirror periscope. |
| 1,085,612 | February 3, 1914 | Adjusting device for optical instrument. |
| 1,086,297 | February 3, 1914 | Prismatic device. |
| 1,088,701 | March 3, 1914 | Distance-measuring instrument. |
| 1,091,933 | March 31, 1914 | Telescope with variable magnification. |
| 1,097,635 | May 26, 1914 | Telescope with variable magnification. |
| 1,098,844 | June 2, 1914 | Package for light-sensitive films. |
| 1,098,905 | June 2, 1914 | Periscope. |
| 1,104,769 | July 28, 1914 | Optical system for prism-carrying devices. |
| 1,108,180 | August 25, 1914 | Base-line telemeter. |
| 1,108,307 | August 25, 1914 | Spherically chromatically, astigmatically, and comatically corrected double objective. |
| 1,116,069 | November 3, 1914 | Telescope of unvariable length and progressively, variable magnification. |
| 1,136,951 | April 27, 1915 | Surveying instrument. |
| 1,146,428 | July 13, 1915 | Device for taking aim with quick-firing guns with protecting shields and telescopic sight. |
| 1,147,990 | July 27, 1915 | Distance-measuring instrument. |
| 1,151,978 | August 31, 1915 | Cinematographic apparatus. |
| 907,366 | December 22, 1908 | Sighting telescope for arms and arm with sighting telescope. |
| 909,459 | January 12, 1909 | Device for exposing light-sensitive layer carriers. |
| 912,352 | February 16, 1909 | Objective. |
| 913,353 | February 23, 1909 | Foldable reflex camera. |
| 926,495 | June 29, 1909 | Photographic change box. |
| 930,621 | August 10, 1909 | Packing for light-sensitive layer carriers. |
| 934,440 | September 21, 1909 | Ocular prism for base-line telemeters. |
| 941,126 | November 23, 1909 | Roller blind for photographic cameras. |
| 941,503 | November 30, 1909 | Optical distance-measuring instrument. |

| Patent No. | Date of Issue. | Title. |
|---|---|---|
| 944,595 | December 28, 1909 | Photographic camera. |
| 972,622 | October 11, 1910 | Stereotelescope. |
| 976,370 | November 22, 1910 | Periscope. |
| 947,946 | February 1, 1910 | Device for exposing light-sensitive layer carriers and film structure therefor. |
| 984,007 | February 14, 1911 | Device for exposing sensitive layer carriers. |
| 986,420 | March 7, 1911 | Film pack and adapter therefor. |
| 988,637 | April 4, 1911 | Level. |
| 989,784 | April 18, 1911 | Photographic camera. |
| 1,000,630 | August 15, 1911 | Packing for light-sensitive layer carriers. |
| 1,001,958 | August 29, 1911 | Attaching device for optical instruments. |
| 1,027,420 | May 28, 1912 | Angular mirror. |
| 1,038,831 | September 17, 1912 | Distance-measuring instrument of the coincident-image type. |

3. All of the rights, interests and benefits created in favor of or conferred upon said enemy, Optische Anstalt C. P. Goerz Atkiengessellschaft by a certain agreement dated on or about September 8th, 1906, between said enemy, Optische Anstalt C. P. Goerz Aktiengessellschaft and C. P. Goerz American Optical Company, whereby said enemy, Optische Anstalt C. P. Goerz Aktiengessellschaft granted to C. P. Goerz American Optical Company certain rights and license without payment of royalties or license fees by said C. P. Goerz American Optical Company to said Optische Anstalt C. P. Goerz Aktiengessellschaft, under all letters patent of the United States held by the said Optische Anstalt C. P. Goerz Aktiengesellschaft; and also, said letters patent of the United States, and all claims and demands whatsoever created or existing in favor of or conferred upon said enemy, Optische Anstalt C. P. Goerz Aktiengessellschaft against said C. P. Goerz American Optical Company under said agreement, including the right to terminate such rights and licenses or any of them, and including also

any and all reversionary rights and interests of said enemy, Optische Anstalt C. P. Goerz Aktiengesellschaft under and by virtue of said agreement.

And whereas, the highest bid received was fifty-seven ($57,000) dollars for the entire stock and other property offered, which bid was made by Bausch and Lomb Optical Company.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said Bausch and Lomb Optical Company, and to re-sell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 24th day of July in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

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## PLAINTIFF'S EXHIBIT No. 719.

EXECUTIVE ORDER REJECTING THE BID OF GEORGE W. STETSON, ROBERT T. MICKLE AND PAUL H. WALTHER FOR CERTAIN SHARES OF THE CAPITAL STOCK OF H. R. HEINICKE, INC., A NEW YORK CORPORATION, AND GLOBE CLAY COMPANY, INC., AN OHIO CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JULY 14, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the

enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby, make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of New York, State of New York at 3.00 o'clock p. m. on the 14th day of July, 1919, certain shares of the capital stock of H. R. Heinicke, Inc., a New York Corporation, and Globe Clay Company, Inc., an Ohio Corporation, said shares being described as follows:

Item I. 500 shares of the common capital stock of H. R. Heinicke, Inc., a corporation of the State of New York, out of a total issue of 500 shares of the par value of $100 each.

Item II. 39 shares of the common capital stock of the Globe Clay Company, Inc., a corporation of the State of Ohio, out of a total issue of 139 shares of the par value of $100 each.

And whereas, the highest bid received for said stock as enumerated in Items I and II above was $45,600.00, being the bid made by George W. Stetson, Robert T. Mickle and Paul H. Walther.

The Alien Property Custodian is hereby author-

ized and shall have the right to reject all bids made at said sale, including the bid of the said George W. Stetson, Robert T. Mickle and Paul H. Walther, and to resell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this first day of August in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

THE WHITE HOUSE,
1 August, 1919.

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## PLAINTIFF'S EXHIBIT No. 720.

ORDER AUTHORIZING THE SALE OF THIRTY-SEVEN AND ONE-HALF SHARES OF THE COMMON CAPITAL STOCK OF RICHARD MEYER COMPANY, A LOUISIANA CORPORATION, TO BE HELD IN NEW YORK.

By virtue of the authority vested in the President by an act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An Act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30th, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and

prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

The Alien Property Custodian may sell at public auction at the home office of Gans Steamship Line, New York, N. Y., all the shares in the control of the Alien Property Custodian of the capital stock of Richard Meyer Company, a corporation organized under the laws of the State of Louisiana, having its principal office in the City of New Orleans, Louisiana.

My reasons for the foregoing determination and Order are:

(a) Richard Meyer Company is the New Orleans Branch of Gans Steamship Line separately incorporated merely for convenience. The stock of Richard Meyer Company in the control of the Alien Property Custodian can be sold most advantageously at the same time and place that the stock of Gans Steamship Line, in control of the Alien Property Custodian, is sold.

(b) Unnecessary expense and inconvenience may be thereby avoided.

Done in the District of Columbia this first day of August, in the year of our Lord One thousand nine hundred and nineteen and of the Independence of the United States the one hundred forty-fourth.

WOODROW WILSON.

THE WHITE HOUSE,
1 August, 1919.

## PLAINTIFF'S EXHIBIT No. 721.

EXECUTIVE ORDER VESTING POWER AND AUTHORITY IN THE ALIEN PROPERTY CUSTODIAN TO SELL CERTAIN PROPERTIES FORMERLY BELONGING TO SCHILMANN & BENE AT A PLACE OTHER THAN THE LOCUS OF A MAJOR PORTION THEREOF.

By virtue of the authority vested in me by an Act of Congress entitled "An act to define, regulate and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30th, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, and all other powers and authorities me hereto enabling I hereby in the public interest, make the following determination and order:

The Alien Property Custodian is hereby authorized to sell at public auction at such place in the City of Spokane, Washington, as he or his authorized agent may select the following property:

Item 1. All rights, titles, interest, and liens acquired by virtue of payment of taxes upon certain real property situate in the County of Stevens, State of Washington, formerly belonging to American Tungsten Consolidated Corporation, evidenced by the follow-

ing certificates of delinquency and tax receipts issued by the Treasurer of Stevens County, Washington, as follows:

Certificate No. 4050 for the sum of $55.00 issued to F. C. Allen on the 8th day of October 1915 and assigned by him on the 16th day of December 1915 to Charles S. Cullen for delinquent taxes against the following described property: the W. ½ of the NW. ¼ and the NE. ¼ of the NW. ¼ and the NW. ¼ of Sec. 13, Tp. 29, N. R. 37 for the years 1912 and 1913.

Tax receipt No. 6072 for $33.10 for taxes for the year 1914 paid on account of Certificate No. 4050 by F. C. Allen and assigned by him on the 16th day of December 1915 to Charles S. Cullen.

Tax receipt No. 5347 for $31.58 for taxes for the year 1915 paid by Charles S. Cullen on account of Certificate No. 4050.

Tax receipt No. 5346 for $28.00 for taxes for the year 1916 paid by Charles S. Cullen.

Tax receipt of Delinquency No. 4051 issued by the Treasurer of Stevens County, Washington, for the sum of $55.00 in the name of F. C. Allen and dated October 8, 1915, and assigned by F. C. Allen on the 16th day of December 1915, to Charles S. Cullen for taxes delinquent for the years 1912-13 assessed against the following described property; the SE. ¼ of the NW. ¼ and the N. ½ of the SW. ¼ and the SE. ¼ of Section 13, Township 29, N. R. 37.

Tax Receipt No. 6073 for $33.10 for taxes for the year 1914 paid on account of Certificate 4051 by F. C. Allen and assigned by him on December 16, 1915, to Charles S. Cullen.

Tax Receipt 5345 for $31.50 for taxes for the year 1915 paid on account of certificate No. 4051 by Charles S. Cullen.

Tax receipt No. 5748 for $28.00 for taxes for the year 1916 paid on account of Certificate No. 4051 by Charles S. Cullen.

Tax certificate of delinquency No. 4202 for the sum of $1313.45 issued to Charles S. Cullen on the 3rd day of January 1916 by the Treasurer of Stevens County, Washington, for delinquent taxes for the years 1912 and 1913 assessed against the following described property: the SW. ¼ of the SE. ¼ of the SW. ¼ of Sec. 13, Tp. 29, N. R. 27.

Tax receipt No. 915 for taxes for the year 1914 paid on account of Certificate 4202 for the sum of $107.05 dated Jan. 3, 1910, and issued to Charles S. Cullen.

Tax receipt No. 5346 for the sum of $98.33 for taxes for the year 1915 paid on account of Certificate No. 4202 and issued to Charles S. Cullen, dated June 15th, 1916.

Tax receipt No. 5749 for $67.40 being for taxes for the year 1916 paid by Charles S. Cullen on account of Certificate No. 4202; together with said certificates, receipts and muniments of said right, title and interest and,

Item II. 260 of a total issue of 300 first mortgage 8% bonds of Germania Mining Company due February 21, 1915, of the face value of $250 each dated February 21, 1910, and secured by property located in Stevens County, Washington, described in a trust deed dated February 21, 1910, from Germania Mining Company to Union Trust Company, Spokane, Washington, Trustee, with coupons #3 and

all subsequent coupons thereon together with all rights hitherto insuring to Schilmann & Bene by virtue of said bonds and trust including the right to collect that indebtedness arising out of advance of money in the sum of, to wit, $3,538.66 to said Trustee from Charles S. Cullen, Agent, for the preservation and protection of said trust and

Item III. All right, title and interest in and to the following property:

1 U. S. bob-sled.
1 road grader.
1 book-keeper's desk, stool and cabinet.
1 office desk and chair.
1 filing cabinet.

formerly located on the property of American Tungsten Consolidated Corporation in Stevens County, State of Washington, heretofore seized by the Alien Property Custodian under the "Trading with the Enemy Act."

My reasons in the public interest for the foregoing determination and order are:

First, said property is located at a place difficult to access.

Second. It is advantageous that said property be offered for sale at the same time and place as certain shares of stock of American Tungsten Consolidated Corporation, which shares are to be offered for sale in the said City of Spokane by the Alien Property Custodian.

Third. Unnecessary expense may thereby be saved.

Done in the District of Columbia this first day of August, in the year of our Lord one Thousand nine

hundred and nineteen, and of the independence of the United States of America the one hundred and forty-fourth.

WOODROW WILSON.

THE WHITE HOUSE,
1 August, 1919.

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## PLAINTIFF'S EXHIBIT No. 722.

EXECUTIVE ORDER REJECTING THE BID OF WILLIAM H. WRIGHT FOR CERTAIN REAL ESTATE, KNOWN AS THE MULLER PROPERTY, SITUATE IN THE CITY OF NEW ORLEANS, STATE OF LOUISIANA, OFFERED FOR SALE AT PUBLIC AUCTION ON JULY 24, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendments to such act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of New Orleans, State of Louisiana, at 12 o'clock noon on the 24th day of July, 1919, certain real estate, known as The Muller Property, situate in the City of New Orleans, State of Louisiana, said real estate being described as follows:

> A lot of ground on the corner of Camp and Common streets in the square bounded by St. Charles and Canal Streets, measuring forty-four feet two and one-half inches (44′ 2½″) front on Camp Street, eighty feet eight inches (80′ 8″) in depth and front on Common Street, seventy-four feet nine inches (74′ 9″) in depth on the line towards Canal Street, and thirty-eight feet eight inches (38′ 8″) in width in the rear—the square bounded by Camp, Common, St. Charles and Canal Streets is an irregular square, and accounts to a great extent for the lack of regularity in the measurements of the property. Together with the improvements thereon, which improvements consist of a three-story brick building now being used for mercantile purposes.

And whereas, the highest bid received for said real estate was forty-eight thousand five hundred ($48,500.00) dollars for the entire property offered, which bid was made by William H. Wright.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said William H. Wright, and to re-sell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this twelfth day of August in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

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**PLAINTIFF'S EXHIBIT No. 723.**

EXECUTIVE ORDER CONCERNING A SALE TO BE CONDUCTED BY THE ALIEN PROPERTY CUSTODIAN PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by an "Act to define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, I hereby in the public interest make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, without public or other advertisement, the following property, to-wit:

"Lot 77 in Franz A. R. Jung's subdivision in Square 159, as per plat of said subdivision recorded in Book 26 at page 198, one of the Records of the Office of the Surveyor of the District of Columbia;"

said real estate formerly having been owned by Franz A. R. Jung and Sophie A. Nordhoff Jung, residents of Munich, Germany, the same having been required to be conveyed, transferred, assigned, and delivered to, and having been seized by, the Alien Property Custodian.

My reasons for the foregoing determination, order, rule and regulation are:

(a) That property such as that herein described cannot usually be sold to advantage at public sale after public or other advertisement.

(b) That an advantageous offer for the purchase of said property has been received by the Alien Property Custodian.

(c) That said Franz A. R. Jung and Sophie A. Nordhoff Jung have expressed their approval of the private sale of said property at the price offered.

Done in the District of Columbia this 16th day of August in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

## PLAINTIFF'S EXHIBIT No. 724.

EXECUTIVE ORDER REJECTING THE BID OF JOHN C. LINCOLN FOR CERTAIN SHARES OF THE CAPITAL STOCK AND OTHER PROPERTY OF ATLANTIC WELDING CORPORATION, A NEW YORK CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON AUGUST 13, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of New York, State of New York, at 11.00 o'clock a. m. on the 13th day of August, 1919, certain shares of the capital stock and other property of Atlantic Welding Corporation, a New York Corporation, said shares being described as follows:

*Item I.* All right, title, and interest in and to these certain letters patent of the United States identified as follows:

| Patent No. | Date of Issue. | Title. |
|---|---|---|
| R-14,137* | May 23, 1916..... | Welded rail joints. |
| 1,070,444 | August 19, 1913... | Rail-joints. |
| 1,070,445 | August 19, 1913... | Rail-joints. |
| 1,196,544 | August 29, 1916... | Method of coating metal with metal. |

*Reissue of patent 930,066, dated August 3, 1909.

and every right, title, and interest with respect thereto, including all damages and profits recoverable at law or in equity from any person, firm, corporation, or government for past infringement thereof, subject to the rights, if any, of Atlantic Welding Corporation and Lincoln Rail Welding Company.

*Item II.* 907 shares of the preferred capital stock of Atlantic Welding Corporation, a corporation of the State of New York, of the par value of $100 each, being all the capital stock of said corporation outstanding.

*Item III.* The right, if any, formerly enuring to the benefit of Accumulatoren Fabrik Aktiengessellschaft to have issued $250,000 par value of the common capital stock of the Atlantic Welding Corporation.

*Item IV.* All right, title and interest in and to those certain letters patent of the United States identified as follows:

| Patent No. | Date of issue. | Title. |
|---|---|---|
| R-14,245* | January 9, 1917.... | Process and apparatus for making brazed joints. |

*Reissue of patent 1,169,484, dated January 25, 1916.

and every right, title and interest with respect thereto, including all damages and profits recoverable at law or in equity from any person, firm, corporation, or government for past infringement thereof, subject to the rights, if any, of Atlantic Welding Corporation and Lincoln Rail Welding Company.

*Item V.* All right, title and interest in and to those certain letters patent of the United States identified as follows:

| Patent No. | Date of issue. | Title. |
|---|---|---|
| 1,132,052 | March 16, 1915. | Method of making welded rail joints. |

and every right, title and interest with respect thereto, including all damages and profits recoverable at law or in equity from any person, firm, corporation, or government for past infringement thereof, subject to the rights, if any, of Atlantic Welding Corporation and Lincoln Welding Company.

*Item VI.* All right, title and interest in and to those certain letters patent of the United States identified as follows:

| Patent No. | Date of issue. | Title. |
|---|---|---|
| 799,934 | September 19, 1905. | Process for electrically welding rail joints. |
| 804,763 | November 14, 1905. | Process of electrically welding rails. |

and every right, title and interest with respect thereto, including all damages and profits recoverable at law or in equity from

any person, firm, corporation, or government for past infringement thereof, subject to the rights, if any, of Atlantic Welding Corporation and Lincoln Rail Welding Company.

*Item VII.* All right, title and interest in and to those certain letters patent of the United States identified as follows:

| Patent No. | Date of issue. | Title. |
|---|---|---|
| 934,884 | September 21, 1909 | Rail and manufacture thereof. |
| 1,010,411 | December 5, 1911 | Method of making welded rail joints. |

and every right, title and interest with respect thereto, including all damages and profits recoverable at law or in equity from any person, firm, corporation, or government for past infringement thereof, subject to the rights, if any of Atlantic Welding Corporation and Lincoln Rail Welding Company.

*Item VIII.* All that certain obligation and indebtedness appearing upon the books and records of Atlantic Welding Corporation as of November 13, 1918, in the name of and to the credit of Accumulatoren Fabrik Aktiengesellschaft in the amount of $16,703.65, together with any accretions thereto and any interest accrued on the said obligation and indebtedness and on the accretions thereto together with that certain right of the said Accumulatoren Fabrik Aktiengesellschaft to have issued at its option $16,703.65 in value of the preferred capital stock of the Atlantic Welding Corporation as payment of the indebtedness hereinbefore described.

And whereas, the highest bid received for said stock was $10,000, being $8,400 for Items I, II, III and VIII; $1,000 for Item IV; $200 for Item V; $200 for Item VI; and $200 for Item VII, which bid was made by John C. Lincoln.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said John C. Lincoln, and to re-sell such property at public sale.

My reason for the foregoing determination and order is that the above stated price bid for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 30th day of August, in the year of our Lord one thousand nine hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

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## PLAINTIFF'S EXHIBIT No. 725.

EXECUTIVE ORDER AUTHORIZING THE ALIEN PROPERTY CUSTODIAN TO SELL CERTAIN PROPERTY AT PRIVATE SALE.

By virtue of the authority vested in me by an Act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An act making appropria-

tions to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses, and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, I hereby, in the public interest, make the following determination, order, rule and regulation:

The Alien Property Custodian is hereby authorized to sell at private sale, at such time and place as to him or to his authorized agent may seem advisable, without public or other advertisement, certain real estate now being held and administered by him as such Alien Property Custodian and heretofore, upon requirement conveyed, transferred, assigned, and delivered to him as the property of Johann Krannichfeldt and Nicholas Schmitt, doing business under the name of The Star Electric Fuze Works, which said persons he did after investigation determine to be enemies within the purview of said Act as amended, which property is described as follows, to wit:

The surface of all that lot of land situate in the Township of Wilkes-Barre, County of Luzerne and State of Pennsylvania, bounded and described as follows, to wit:

Beginning on line between the Dana and Metcalf tracts 925 feet southeast from Chase Street; thence along said line 47 degrees South 46 minutes East, 428 feet to a point on the northerly side of Shannon Street; thence along the line of the northerly side of Shannon Street; South 43 degrees 26 minutes West 40 feet to a corner; thence 46 degrees 34 minutes East 143.7/100 feet more or less to a corner in line of the right of way of Central R. R. Co. of New Jersey; thence along the line of said right of way of the Central Railroad Company of New Jersey in a southwesterly direction 558 feet more or less to lands of the Lehigh & Wilkes-Barre; thence along the same North

47 degrees 46 minutes West, 391 feet more or less to a corner; thence North 42 degrees 14 minutes East, 569-28/100 feet to the place of beginning. Being the same premises conveyed to Nicholas Schmitt and John Krannichfeldt, by two deeds dated the first of March, 1904, and the sixteenth of January, 1913, recorded respectively in the office for recording deeds in Luzerne County, in Deed Book No. 418, page 389 and 487, page 419; together with all buildings and improvements thereon; also

All the surface of all that certain lot of land in Wilkes-Barre Township, Luzerne County, Pennsylvania, being lot No. 48 on plot of lots of Frank P. Slattery and William Mayles as shown on allotment in Luzerne County in Map Book No. 1, page 356 and 357, bounded and described as follows, to wit:

Beginning at a corner on Pulaski Street 195 feet southeasterly from the intersection of said Street with Kearing Street; thence along Pulaski Street South 46 degrees, 34 minutes East 40 feet to a corner in line of lot No. 49; thence along the line of lot No. 49 South 43 degrees 26 minutes West about 134 4/10 feet more or less to the line of the Dana Estate; thence along the line of the Dana Estate North 46 degrees 34 minutes West 40 feet more or less to a corner in line of lot No. 47; thence along the line of lot No. 47 North 43 degrees 26 minutes East about 134.4/10 feet more or less to the place of beginning. Being part of a large tract of land conveyed to Frank P. Slattery and William Mayles by H. F. Metcalf, et al. by Deed dated April 12, 1911, and to John Krannichfeldt and Nicholas Schmitt dated September 29, 1913, recorded October 14, 1913, Deed Book 496, Page 126; together with all buildings and improvements thereon.

My reasons for the foregoing determination, order, rule and regulation are:

(a) The said real estate is subject to a lease between the Star Electric Fuze Works and the Atlas Powder Company made under a license granted by the War Trade Board and with the consent of the Alien Property Custodian, which lease contains an option in favor of the Atlas Powder Company to purchase the property. The validity of said option may be a matter of some doubt, but its existence constitutes a cloud upon the title to the property by reason whereof this property can not be sold advantageously at public sale.

(b) An attempted sale at auction would be a useless formality and would involve unnecessary expenses, delay and inconvenience which should be avoided.

WOODROW WILSON.

THE WHITE HOUSE,
21 September, 1919.

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**PLAINTIFF'S EXHIBIT No. 726.**

EXECUTIVE ORDER REJECTING THE BID OF RICHTER & COMPANY FOR CERTAIN SHARES OF THE CAPITAL STOCK OF THE FIRST REINSURANCE COMPANY OF HARTFORD, A CONNECTICUT CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON SEPTEMBER 17TH, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in me by "An Act to define, regulate and punish Trading with the Enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30,

1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, and all other powers and authorities me hereto enabling, I do hereby make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of Hartford, State of Connecticut at twelve o'clock noon on the 17th day of September, 1919, certain shares of the capital stock of The First Reinsurance Company of Hartford, a Connecticut corporation, said shares being described as follows:

> 4,505 shares of the capital stock of the First Reinsurance Company of Hartford, a corporation of the State of Connecticut, out of a total issue of 5,000 shares of the par value of $100.00 each.

And whereas, the highest bid received for said stock was Six Hundred and Ten Thousand ($610,000) Dollars for the entire 4,505 shares offered, which bid was made by Richter & Company.

The Alien Property Custodian is hereby authorized and shall have the right to reject all bids made at said sale, including the bid of the said Richter & Company.

My reason for the foregoing determination and order is that the above stated price for the said property is inadequate and not the fair value thereof.

Done in the District of Columbia this 25th day of November, in the year of our Lord one thousand nine

hundred and nineteen, and in the year of the independence of the United States, the one hundred forty-fourth.

WOODROW WILSON.

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## PLAINTIFF'S EXHIBIT No. 727.

RE-VESTING IN DESIGNATED OFFICERS CERTAIN POWERS UNDER THE TRADING WITH THE ENEMY ACT.

By virtue of the power and authority vested in me by "An Act to define, regulate and punish trading with the enemy and for other purposes," approved October 6, 1917, I hereby rescind, as of the 14th day of July, 1919, the Executive Order of April 11, 1918, which revoked (1) the power and authority vested in the Secretary of the Treasury by Section XI of the Executive Order of October 12, 1917, to issue licenses to send, take or transmit out of the United States any letter or other writing, book, map, plan or other paper, picture, or any telegram, cablegram, or wireless message, or other form of communication intended for or to be delivered, directly or indirectly, to an "enemy" or "ally of enemy," in any way relating to letters patent, or registration of trade-mark, print, label or copyright, or to any application therefor, and (2) the power and authority vested in the Federal Trade Commission by Section XVII of the Executive Order of October 12, 1917, to issue licenses to any citizens of the United States or any corporation organized within the United States, to file or prosecute applications in the country of an "enemy" or "ally of enemy" for letters patent or for registration of trade-mark, print, label or copyright, and to pay any fees or agents' fees in connection therewith; or to pay to any "enemy" or "ally of enemy" any tax, annuity or fee in relation to patents,

trade-marks, prints, labels and copyrights; and I do hereby order that on and after July 14, 1919, licenses to perform the acts hereinabove described may be issued under Sections XI and XVII of the Executive Order of October 12, 1917, by the officials in whom the authority to issue such licenses was by said Order vested and I do hereby further order that any and all licenses issued on or after July 14, 1919, which, except for the above mentioned Order of April 11, 1918, would by their terms authorize any of the acts hereinabove described, are hereby confirmed and approved, and all such licenses shall be deemed to have full force and effect according to the terms thereof, in like manner as though said Order of April 11, 1918, had been rescinded prior to July 14, 1919.

WOODROW WILSON.

THE WHITE HOUSE,
25 November, 1919.

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**PLAINTIFF'S EXHIBIT No. 728.**

ORDERS BY FRANK L. POLK, UNDER AUTHORITY OF EXECUTIVE ORDER OF DECEMBER 3, 1918.

ORDER CONCERNING THE SALE OF THE CAPITAL STOCK OF THE INTERNATIONAL INSURANCE COMPANY OF NEW YORK PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by "An act to define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act" and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies

in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order No. 3016 and signed by the President under the third day of December, 1918, I hereby, in the public interest, make the following determination and order:

The alien property custodian having offered at public sale in the city of New York, State of New York, at 10 o'clock a. m., on the 21st day of November, 1918, the following property, to wit, those 2,000 shares of the capital stock of the International Insurance Company of New York, a corporation organized and existing under and by virtue of the laws of the State of New York; held by him as alien property custodian and certain bids having been made for said stock, the alien property custodian be, and he is hereby, authorized to reject all bids made at such sale and to resell said property at private sale to an American citizen without public or other advertisement at not less than the highest sum bid therefor at such sale, to wit, the sum of $576,500.

My reasons for the foregoing determination and order are:

(*a*) That upon investigation by the alien property custodian it has developed that the highest bid made at said sale was for and account of persons whose names were not disclosed as provided by the law and said bid is therefore not in accordance with law and should not be accepted.

(*b*) That the said stock is sought to be acquired

by said highest bidder and other persons for the purposes of liquidating the business of said International Insurance Company of New York, and it is the expressed opinion of State officials having supervision over insurance companies, in which I concur, that it will be to the best interests of the people of the United States to continue the said insurance company as a going concern under American ownership rather than to allow its liquidation and dissolution at the present time.

(*c*) Another public sale would entail useless delay and expense.

Done in the District of Columbia this fourth day of December in the year of our Lord one thousand nine hundred and eighteen, and of the independence of the United States of America the one hundred and forty-third.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-A.

ORDER CONCERNING THE SALE, TRANSFER, RELEASE, AND SURRENDER OF CERTAIN RIGHTS OF H. E. SCHNIEWIND, A COPARTNERSHIP, AND OF THE COPARTNERS THEREOF RESIDENT IN GERMANY, DETERMINED TO BE ENEMIES NOT HOLDING A LICENSE OR LICENSES GRANTED BY THE PRESIDENT, WITHIN THE PURVIEW OF THE "TRADING WITH THE ENEMY ACT" AND THE AMENDMENTS THERETO.

By virtue of the authority vested in the President by an act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendment to such act embodied in "An act making appropriations

to supply urgent deficiencies in the appropriations for the fiscal year ending June 30th, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order No. 3016, and signed by the President under the third day of December, 1918, I hereby, in the public interest make the following determination and order:

The Alien Property Custodian shall, without the formality of a public advertisement or public sale or auction sell, transfer, dispose of, release, surrender and quitclaim to Henry Schniewind, jr., of the Borough of Manhattan, city of New York, and in connection therewith execute and deliver to him, the said Henry Schniewind, jr., a proper instrument in writing duly transferring, disposing of, releasing, surrendering and quitclaiming to him, for such price or consideration as the Alien Property Custodian may deem adequate and proper, all the rights which H. E. Schniewind, a copartnership, of Elberfeld, Germany, has and also all the rights which Heinrich Schniewind, sr., Willy Schniewind, Hans Schniewind, and any other member or members of said copartnership, if any, resident in Germany, or any or either of them have, individually or as a member or members of said copartnership of H. E. Schniewind, under or by virtue of a certain option agreement between Henry Schniewind, jr., of New York City, and said copartnership of H. E. Schniewind, dated March 20th, 1917, and under or by virtue of a certain prior option agreement modified by said option agreement of March 20th, 1917, or un-

der or by virtue of either of said option agreements, to terminate a certain agreement between the said Henry Schniewind, jr., and the said copartnership of H. E. Schniewind dated July 1st, 1915, whereby said Henry Schniewind, jr., acquired from said copartnership all the common and voting capital stock of Susquehanna Silk Mills, a New York corporation, so that each of said option agreements and all rights of said copartnership of H. E. Schniewind and of Heinrich Schniewind, sr., Willy Schniewind, Hans Schniewind, and any other member or members of said copartnership, if any, resident in Germany, and of each of them, thereunder, both individually and as a member or members of said copartnership, may be completely extinguished, terminated, cancelled, and ended; and in order, in accordance with the purpose and intent of said act of Congress and the amendments thereto, to guard against the said common or voting capital stock of Susquehanna Silk Mills passing into the ownership, possession, or control of enemies or allies of enemies as defined by said statute, the Alien Property Custodian may require said stock to be settled in trust for such time and in such manner and under such circumstances as to the Alien Property Custodian may seem proper.

My reasons in the public interest for the foregoing determination and order are:

First. That the aforesaid rights are not the subject of public sale to the highest bidder for the reason, *inter alia*, (*a*) that no one save the enemies, or one or more of them, is in a position to perform the conditions necessary to the exercise of said option rights, and (*b*) that such rights have no market value to any person or persons other than the parties to the said instruments hereinbefore mentioned.

Second. That the only effective method whereby said option rights can be extinguished is by disposing

of, transferring, releasing, and surrendering said option rights to the persons who gave them and thereby cancelling the same.

Third. That the person against whom said option rights run, namely, Henry Schniewind, Jr., is willing to pay a substantial sum for the transfer, release, surrender and cancellation thereof.

Fourth. That an attempted sale at auction would be a useless formality and would involve unnecessary expense, delay, and inconvenience which should be avoided.

Done in the District of Columbia, this 11th day of January, in the year of our Lord one thousand nine hundred and nineteen and of the independence of the United States of America the one hundred and forty-third.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-B.

ORDER CONCERNING THE SALE, TRANSFER, AND RELEASE OF CERTAIN RIGHTS UNDER LETTERS PATENT, TRADE-MARKS, AND SIMILAR RIGHTS DETERMINED TO BELONG TO OR TO BE HELD FOR, BY, ON ACCOUNT OF, OR ON BEHALF OF OR FOR THE BENEFIT OF PERSONS DETERMINED TO BE ENEMIES NOT HOLDING A LICENSE OR LICENSES GRANTED BY THE PRESIDENT WITHIN THE PURVIEW OF THE TRADING WITH THE ENEMY ACT AND THE AMENDMENTS THERETO.

By virtue of the authority vested in the President by an act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendment to such act embodied in "An act making appropriations

to supply urgent deficiencies in the appropriations for the fiscal year ending June 30th, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive order No. 3016 and signed by the President under the third day of December, 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian may release and discharge the United States of America and any department thereof upon such terms and conditions as to the Alien Property Custodian may seem proper, from any and all claims and demands arising from any alleged infringement of the letters patent, trade-marks, and rights under letters patent and trade-marks hereinafter referred to.

The Alien Property Custodian may sell at private sale without public or other advertisement to The Chemical Foundation (Inc.), a corporation organized and existing under and by virtue of the laws of the State of Delaware at such place and upon such terms and conditions as to the Alien Property Custodian or his authorized agent may seem proper, all of the letters patent, trade-marks, and rights under letters patent and trade-marks, including all profits and damages recoverable at law or in equity for the past infringement thereof which the Alien Property Custodian may seize or may have seized under the provisions of the said trading with the enemy act and the amendments thereto now or hereafter enacted and which he from time to time shall determine relate to

the objects and purposes of said The Chemical Foundation (Inc.), as expressed and defined by its charter.

My reasons in the public interest for the foregoing determination, order, rule, and regulation, are:

First. Said letters patent, trade-marks, and similar rights can not be sold to the best advantage at public sale after public or other advertisement.

Second. The Chemical Foundation (Inc.) has been incorporated for the purpose of holding letters patent, trade-marks, and similar rights relating to the chemical and allied sciences as a trustee for American industry, for the purpose of the Americanization of such industries as may be affected thereby, of eliminating alien interests hostile to said American industries and of the advancement of chemical and allied industry in the United States. The Chemical Foundation (Inc.) is obligated to grant nonexclusive licenses upon equal terms at a uniform royalty to qualified American manufacturers and is empowered to grant free licenses to the United States for any use the United States may desire to make of the inventions covered by said letters patent and similar rights.

Third. The public interest will be best served by a wide use of the inventions covered by said letters patent and similar rights and such wide use can be most readily promoted by the licenses which the said The Chemical Foundation (Inc.) is by its charter obligated to grant.

Fourth. A private sale will prevent said letters patent, trade-marks, and similar rights from falling into the hands of purchasers who would be unwilling or unable to put the inventions covered thereby into use, or would use them for purely speculative purposes.

Fifth. It would be impossible to make a public sale of the said letters patent, trade-marks, and similar rights so as to secure the foregoing benefits to the public.

Sixth. Unnecessary expense, delay, and inconvenience may be avoided by a private sale.

Done in the District of Columbia this the 26th day of February, in the year of our Lord one thousand nine hundred and nineteen, and of the independence of the United States of America the one hundred and forty-third.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-C.

AN ORDER CONCERNING THE SALE AND CONVEYANCE OF CERTAIN LETTERS PATENT OF THE UNITED STATES, APPLICATIONS FOR LETTERS PATENT, AND RIGHTS, INTERESTS, AND BENEFITS UNDER CERTAIN AGREEMENTS MORE PARTICULARLY HEREINAFTER DESCRIBED, DETERMINED TO BELONG TO, OR TO BE HELD FOR, BY, ON ACCOUNT OF, OR ON BEHALF OF, OR FOR THE BENEFIT OF, PERSONS DETERMINED TO BE ENEMIES NOT HOLDING A LICENSE OR LICENSES GRANTED BY THE PRESIDENT WITHIN THE PURVIEW OF THE "TRADING WITH THE ENEMY ACT" AND THE AMENDMENTS THERETO.

By virtue of the authority vested in the President by an act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendments to said act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendments to said act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year

ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders, such as that herein contained, which authority has been delegated to me by the Executive Order No. 3016 and signed by the President on the 3d day of December, 1918, I hereby make the following rule, determination, and order:

The Alien Property Custodian may sell to Locomotive Superheater Company at private sale, without public or other advertisement, at such time and upon such terms and conditions as to the Alien Property Custodian or his authorized agent may seem proper, the following described property heretofore acquired by and now vested in the Alien Property Custodian by virtue of his requirements.

(*a*) All of the rights, interests, and benefits created in favor of or conferred upon Schmidt'sche Heissdampf Gesellschaft, m. b. H., by two certain agreements dated, respectively, the 10th day of November, 1910, and the 7th day of August, 1911, between said Schmidt'sche Heissdampf Gesellschaft, m. b. H., and Locomotive Superheater Company, together with all rights and interests created and existing in favor of or conferred upon said Schmidt'sche Heissdampf Gesellschaft, m. b. H., in and to any royalties or sum or sums of money hereafter accruing in favor of, or becoming due or payable to said Schmidt'sche Heissdampf Gesellschaft, m. b. H., under the terms of said agreements, and also all claims and demands whatsoever, created or existing in favor of or conferred upon said Schmidt'sche Heissdampf Gesellschaft, m. b. H., against Locomotive Superheater Company, all as more fully set forth in the requirements of the Alien Property Custodian relating to said rights, interests, and benefits.

(*b*) The following letters patent of the United

1883

States and applications for letters patent of the United States, subject to the rights of Locomotive Superheater Company, as more fully set forth in the requirements of the Alien Property Custodian relating thereto:

| Patent No. | Date of Issue | Title. |
|---|---|---|
| 946,466 | January 11, 1910 | Superheater for steam boilers. |
| 1,106,734 | August 11, 1914 | Smoke-tube superheater. |
| 1,074,783 | October 7, 1913 | Method of making U-shaped pipe-bends. |
| 1,075,201 | October 7, 1913 | Method of making U-shaped pipe-bends. |
| 1,114,812 | October 27, 1914 | Superheater for locomotive boilers. |
| 1,120,764 | December 15, 1914 | Locomotive boilers with smoke-tube superheater. |
| 1,129,915 | March 2, 1915 | Steam superheater. |
| 1,133,017 | March 23, 1915 | Method of making U-shaped pipe-bends. |
| 1,164,638 | December 21, 1915 | Die for U-shaped pipe bends. |
| 1,049,155 | December 31, 1912 | Smoke-tube superheater. |
| 1,063,394 | June 3, 1913 | Smoke-tube superheater. |
| 1,072,174 | September 2, 1913 | Water tube boiler. |
| 1,072,194 | September 2, 1913 | Apparatus for cooling superheater pipes. |
| 1,073,305 | September 16, 1913 | Smoke-tube superheater. |
| 1,073,934 | September 23, 1913 | Superheater for water-tube boilers. |
| 1,074,300 | September 30, 1913 | Steam superheater. |
| 1,112,868 | October 6, 1914 | Connecting member for superheater element ends. |
| 1,116,646 | November 10, 1914 | Smoke-tube Superheater. |
| 1,139,601 | May 18, 1915 | Superheater. |
| 1,142,370 | June 8, 1915 | Arrangement in steam engines for taking working steam from the engine cylinders. |
| 1,168,748 | January 18, 1916 | Water-tube boiler. |
| 1,172,407 | February 22, 1916 | Cooling arrangement for flue-tube superheater elements. |
| 1,181,863 | May 2, 1916 | Double-tube superheater. |
| 1,208,405 | December 12, 1916 | Superheater elements for flue-tube boilers. |
| 1,047,710 | December 17, 1912 | Device for removing water from heated pistons. |
| 1,068,368 | July 22, 1913 | Quick-acting steam generator. |
| 1,090,417 | March 17, 1914 | Engine governor. |
| 1,092,543 | April 7, 1914 | Engine. |

| Patent No. | Date of Issue | Title. |
|---|---|---|
| 1,107,204 | August 11, 1914 | Automatic engine governor. |
| 1,166,007 | December 28, 1915 | Quick-acting steam generator. |
| 1,167,527 | January 11, 1916 | Engine governor with automatic inlet valve. |
| 1,182,863 | May 9, 1916 | Fan for induced draft. |
| 1,183,417 | May 16, 1916 | Blower devices for cleaning tubes. |
| 1,296,055 | March 4, 1919 | Superheater for marine fire or smoke tube boilers. |
| 1,179,412 | April 18, 1916 | Marine water tube boiler. |
| 989,812 | April 18, 1911 | High-pressure steam boilers. |

APPLICATIONS.

| Serial No. | Filing date. | Title. |
|---|---|---|
| 4,458 | January 26, 1915 | Power engine plant. |
| 72,741 | January 18, 1916 | Method for cooling the piston of an internal-combustion engine. |
| 74,080 | January 25, 1916 | Cyclic working process for steam engines. |
| 74,146 | January 25, 1916 | Cyclic working process for steam engines. |
| 50,282 | September 11, 1915 | Field tube superheater element, etc. |
| 113,090 | August 4, 1916 | Superheater for marine fire or smoke-tube boilers. |
| 31,794 | June 2, 1915 | Piston packing rings. |
| 79,632 | August 4, 1916 | Combined marine water tube boiler and superheater. |

My reasons in the public interest for the foregoing determination, order, rule, and regulation are:

(*a*) The property described above is not customarily sold and can not usually be sold to advantage at public sale after public or other advertisement;

(*b*) Locomotive Superheater Company is a corporation the majority of the stock of which has been sold by the Alien Property Custodian to the Director General of the Railroads and is therefore controlled by the United States;

(*c*) The property above described is subject to such equitable rights in favor of Locomotive Super-

heater Company as to render it unsalable except to said Locomotive Superheater Company;

(*d*) The conveyance above described to the Locomotive Superheater Company is necessary to permit the said Locomotive Superheater Company to conduct its business, in which the United States is interested without interference from patent owners who are enemy nationals and enemies as defined by the common law and the "Trading with the enemy act."

(Signed) FRANK L. POLK.

Washington, D. C.,
March 24, 1919.

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## PLAINTIFF'S EXHIBIT No. 728-D.

AN ORDER CONCERNING THE CONVEYANCE AND TRANSFER OF CERTAIN RIGHTS, PRIVILEGES, AND INTERESTS IN AND TO CERTAIN PROPERTY MORE PARTICULARLY HEREINAFTER DESCRIBED, DETERMINED TO BELONG TO, OR TO BE HELD FOR, BY, ON ACCOUNT OF, OR ON BEHALF OF, OR FOR THE BENEFIT OF PERSONS DETERMINED TO BE ENEMIES NOT HOLDING A LICENSE OR LICENSES GRANTED BY THE PRESIDENT WITHIN THE PURVIEW OF THE "TRADING WITH THE ENEMY ACT" AND THE AMENDMENTS THERETO.

By virtue of the authority vested in the President by an act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendments to said act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior

fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendments to said act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders, such as that herein contained, which authority has been delegated to me by the Executive order No. 3016 and signed by the President on the 3d day of December, 1918, I hereby make the following rule, determination, and order:

The Alien Property Custodian may transfer and convey to the American Radio Company, a corporation organized and existing under and by virtue of the laws of the State of Delaware, all the right, title and interest formerly of Hochfrequenz-Maschinen Aktiengesellschaft fur Drahtlose Telegraphie, a German corporation (hereinafter referred to as HOMAG) and/or of Rudolph Goldschmidt, in and to the following described property acquired by and now vested in the Alien Property Custodian by virtue of his requirements, upon such terms and conditions as to the Alien Property Custodian or his duly authorized agent shall seem proper.

Every right, title, and interest (formerly held by Hochfrequenz-Maschinen Aktiengesellschaft fur Drahtlose Telegraphie, a German corporation, and/or Rudolph Goldschmidt, of Charlottenberg, Germany) of which the Alien Property Custodian is seized and possessed by virtue of his requirements:

1. In and to the real estate situated in the State of New Jersey, bounded and described as follows:

Beginning at a stone standing on the east side of the road leading from Tuckerton to Osborns Island at the distance of 22 feet from the center thereof and at the distance of 2,050 feet from the center of the

bridge over Big Creek and on a course of north 39 degrees and 45 minutes east, from said bridge over said creek and the northeast corner of McKeever's fish factory on Crab Island bears south 24 degrees 30 minutes east, and the center of the hummock below the mouth of Tuckerton Creek bears north 71 degrees 15 minutes east; and from said center stone so located on a due westerly course the distance of 1,650 feet to a point in the outer line of the circle herein described; thence extending along the line of said circle at a uniform distance of 1,650 feet from said center stone in a southerly, easterly, northerly, and westerly direction to the point in said circle first mentioned; thence extending on a due easterly course the distance of 1,650 feet to the said center stone and place of beginning, the said tract of land lying and being entirely within a circle of 1,650 feet from the said center stone and containing 197 35/100 acres;

Excepting all that part within said circle lying easterly of a line 5 feet distant from the westerly side of Willetts Thoroughfare and Headleys Creek; being a part of said George A. Mott's survey.

Also another tract of land outside the circle above described, beginning at the east edge of the bridge down the center of the road over Osborns Creek; thence (1) down the edge of the easterly side of the bank of said creek the several courses thereof to the mouth of Headleys Creek; thence (2) up said Headleys Creek the several courses thereof till it strikes the Parker line; thence (3) up the Parker line till it strikes the circle as above mentioned; thence (4) following the said circle to the center of the road above mentioned; thence (5) down the said road to the place of beginning.

2. In and to the wireless telegraph station and other buildings and structures erected upon the premises last before mentioned, together with all apparatus,

machinery, instruments, tools, equipment, material and supplies in, or connected with, or appurtenant to said station, buildings and structures, and all books, accounts, estimates, data, receipts, paper, documents, drawings, designs, plans, specifications, licenses, letters and other writings relating to the same.

3. In and to a contract dated May 24, 1912, between Hochfrequenz Maschinen Aktiengesellschaft fur Drahtlose Telegraphie, and the company C. Lorenz Aktiengesellschaft, of Berlin.

4. In and to any amount due or owing by Compagnie Universelle de Telegraphie et de Telephone sans Fil (hereinafter called Cutt) to Hochfrequenz Maschinen Aktiengesellschaft fur Drahtlose Telegraphie, arising out of the construction and installation of the aforesaid radio telegraphic station and other buildings and structures referred to, as well as all apparatus, machinery, instruments, tools, equipment, material and supplies in, or connected with, or appurtenant to such station, buildings and structures, and in respect of the maintenance, upkeep and operation thereof, to September 7, 1914.

5. In and to an agreement made September 30, 1912, between Hochfrequenz Maschinen Aktiengesellschaft fur Drahtlose Telegraphie and Cutt, in and to any claim or claims arising therefrom in favor of Hochfrequenz Maschinen Aktiengesellschaft fur Drahtlose Telegraphie or Rudolph Goldschmidt.

6. In and to the following letters patent of the United States:

| *Patent No.* | *Date of Issue.* | *Title.* |
|---|---|---|
| 999,987 | August 8, 1911 | Apparatus for producing high-frequency currents. |
| 1,104,257 | July 21, 1914 | High-frequency generator. |

| *Patent No.* | *Date of Issue.* | *Title.* |
|---|---|---|
| 1,104,246 | do | Apparatus for and method of receiving electric waves |
| 1,043,047 | October 29, 1912.... | Rotor for electric machines. |
| 1,043,923 | November 12, 1912. | Strengthening electric alternating currents. |
| 1,087,113 | February 17, 1914.. | Machine for receiving electric waves. |
| 1,088,018 | February 24, 1914.. | Means for working microphones in parallel. |
| 1,207,744 | December 12, 1916.. | Asynchronous motor. |

7. And in and to all claims and demands at law or in equity for the past infringement thereof, except claims and demands against the Government of the United States or any of its departments.

My reasons for the foregoing determination, order, rule, and regulation are that evidence has been submitted to me

(*a*) That by virtue of a contract entered into between Homag and Cutt, dated September 30, 1912, and the payment of 2,500,000 francs recited therein, Cutt became the beneficial owner of the Tuckerton land and station, and the patents, patent rights, and other rights and property referred to above; that the legal effect of said contract was that of a present conveyance or bill of sale as of September 30, 1912, of the station (then incomplete) and the patents and other rights and property to Cutt, that thereafter the only rights of Homag and Goldschmidt in connection with said construction were the right to compensation for the construction and installation of the station under Article VII of said contract, which by its terms

limited the amount of Cutt's maximum liability to 2,000,000 francs; that the sums heretofore paid by Cutt and Homag under said contract amount to 1,518,-443.10 francs;

(*b*) That the only property of any substantial value taken over by the Alien Property Custodian by virtue of the requirement referred to above is the claim of Homag to the payment of an unascertained amount under Article VII of the said contract between Homag and Cutt, and as the amount due on this claim is an unascertained amount, it is impossible to sell the claim to the best advantage at public sale after public or other advertisement;

(*c*) That Cutt is a corporation organized under the laws of the Republic of France, and managed and controlled by officers and directors, none of whom are enemies of the United States; and that substantially all of its capital stock is owned by parties who are citizens of countries not at enmity with the United States;

(*d*) That the American Radio Company referred to herein is a corporation of the State of Delaware, incorporated at the instance of Cutt, and Cutt is the beneficial owner of all of the stock of said company and has approved of the transfer and conveyance to said American Radio Company of all the property now held by the Alien Property Custodian by virtue of his requirements aforesaid.

(Signed) FRANK L. POLK.

WASHINGTON, D. C.,
March 24, 1919.

## PLAINTIFF'S EXHIBIT No. 728-E.

AN ORDER CONCERNING THE SALE, TRANSFER, AND RELEASE OF CERTAIN COPYRIGHTS, APPLICATIONS FOR LETTERS PATENT, AND APPLICATIONS FOR THE REGISTRATION OF TRADE-MARKS AND COPYRIGHTS DETERMINED TO BELONG TO OR TO BE HELD FOR, BY, ON ACCOUNT OF, OR FOR THE BENEFIT OF PERSONS DETERMINED TO BE ENEMIES NOT HOLDING A LICENSE OR LICENSES GRANTED BY THE PRESIDENT WITHIN THE PURVIEW OF THE TRADING WITH THE ENEMY ACT AND THE AMENDMENTS THERETO.

By virtue of the authority vested in the President by an act of Congress entitled "An act to define, regulate, and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriation to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive order No. 3016, and signed by the President under the 3d day of December, 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian may release and discharge the United States of America and any department thereof upon such terms and conditions as

to the Alien Property Custodian may seem proper from any and all claims and demands arising from any alleged infringement of the copyrights hereinafter referred to.

The Alien Property Custodian may sell at private sale without public or other advertisement to The Chemical Foundation (Inc.), a corporation organized and existing under and by virtue of the laws of the State of Delaware at such place and upon such terms and conditions as to the Alien Property Custodian or his authorized agent may seem proper, all of the copyrights, the certificates of registration thereof, and the publications upon which said registrations were granted, applications for letters patent and for the registration of trade-marks and copyrights and all rights thereunder which the Alien Property Custodian may seize or have seized under the provisions of the said "Trading with the enemy act" and the amendments thereto now or hereafter enacted and which he from time to time shall determine relate to the objects and purposes of said The Chemical Foundation (Inc.), as expressed and defined by its charter.

My reasons in the public interest for the foregoing determination, order, rule, and regulation are:

First. A similar order, rule and regulation relating to letters patent, trade-marks, and similar rights has been made by me the 26th day of February, 1919, and this order is supplemental thereto and necessary to fully carry out the objects and purposes of said order of February 26, 1919.

Second. Said copyrights, applications for letters patent, and for the registration of trade-marks and copyrights can not be sold to the best advantage at public sale after public or other advertisement.

Third. The Chemical Foundation (Inc.) has been incorporated for the purpose of holding letters pat-

ent, trade-marks, and similar rights relating to the chemical and allied sciences as a trustee for American industry, for the purpose of the Americanization of such industries as may be affected thereby, of eliminating alien interests hostile to said American industries, and of the advancement of chemical and allied industries in the United States.

Fourth. The public interest will be best served by the administration by The Chemical Foundation (Inc.), of the letters patent, trade-marks, copyrights, and applications therefor and similar rights permitted to be sold to it by this order and by my order of the 26th of February, 1919.

Fifth. A private sale will prevent said copyrights, applications for letters patent and for the registration of trade-marks and copyrights from falling into the hands of purchasers who would be unwilling or unable to carry out the purposes of The Chemical Foundation (Inc.), or would use the copyrights, applications for letters patent and for the registration of trade-marks and copyrights for purely speculative purposes.

Sixth. It would be impossible to make a public sale of the said copyrights, letters patent and applications for the registration of trade-marks and copyrights so as to secure the benefits to the public which a sale to The Chemical Foundation (Inc.) would secure to the public.

Seventh. Unnecessary expense, delay and inconvenience may be avoided by a private sale.

Done in the District of Columbia, this 5th day of April, in the year of our Lord one thousand nine hundred and nineteen and of the Independence of the United States of America, the one hundred and forty-third.

(Signed) FRANK L. POLK.

## PLAINTIFF'S EXHIBIT No. 728-F.

AN ORDER REJECTING THE BID OF LUDWIG EISEMANN OF $98,595 FOR 939 SHARES OF THE CAPITAL STOCK OF K. & E. NEUMOND (INC.), OFFERED FOR SALE AT PUBLIC AUCTION ON MARCH 19, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by "An act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive order 3016 and signed by the President under the third day of December, 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian having offered for sale at public auction at the principal office of the company, 501-511 Elysianfield Street, New Orleans, La., at 11 o'clock a. m., on the 19th day of March, 1919, the following property, to-wit:

Nine hundred and thirty-nine (939) shares of the capital stock of K. & E. Neumond (Inc.), a corporation organized under the laws of the State of Louis-

iana, of the par value of $100 each, out of a total authorized and outstanding issue of capital stock of 1,000 shares of said corporation which said property was held by the Alien Property Custodian, and at which sale Ludwig Eisemann having bid the sum of $98,595, which was the highest bid received for said property.

It is therefore ordered, that the Alien Property Custodian be, and he is authorized, and shall have the right to reject all bids at said sale including the bid of said Ludwig Eisemann, and to resell such property in accordance with the provisions of the said "Trading with the enemy act," as amended, and the Executive orders and proclamations issued pursuant thereto.

The reason for the foregoing order is that the price bid for said property by the said Ludwig Eisemann, to wit, the sum of $98,595, is inadequate and not the fair value of the property offered for sale.

Done in the District of Columbia, this 5th day of April, in the year of our Lord one thousand nine hundred and nineteen.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-G.

AN ORDER REJECTING THE BID OF A. SCHAAP & SONS, AND ASSOCIATE, S. STEMFELD COMPANY, A NEW YORK CO-PARTNERSHIP, COMPOSED OF U. STEMFELD AND FRED SELIGMAN OF $154,000 FOR 2,000 SHARES OF THE COMMON CAPITAL STOCK OF DR. JAEGER'S SANITARY WOOLEN SYSTEM COMPANY, A NEW YORK CORPORATION, AND CERTAIN TRADE-MARKS AND LABELS OFFERED FOR SALE AT PUBLIC AUCTION ON FEBRUARY 28, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by "An act to define, regulate and punish trading with

the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy act," and the amendment to such act embodied in "An act making appropriations to supply urgent deficiencies in appropriation for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive order 3016 and signed by the President under the 3d day of December, 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian having offered for sale at public auction in the borough of Manhattan, New York City, at 11 o'clock a. m. on the 28th day of February, 1919, the following property, to wit:

1. Two thousand shares of the common capital stock of the par value of $100 per share, of Dr. Jaeger's Sanitary Woolen System Company, a corporation of the State of New York, all of which are issued and outstanding and which constitute the total outstanding capital sock of said company.

2. The following trade-marks, to wit:

Two concentric circles with anchor device in center and lettering, registered in United States Patent Office, July 27, 1909, No. 74621.

Double square, one inside the other, with lettering and Dr. Jaeger's picture, registered in United States Patent Office, September 14, 1919, No. 75245.

Anchor device in double heart, with the word "Co-

lumbia" above it, registered in United States Patent Office, February 28, 1893, No. 22520.

The word "Columbia," registered in United States Patent Office, October 10, 1893, No. 23684.

Anchor device in a double heart, registered in United States Patent Office, October 10, 1893, No. 23685.

The words "Prof. Dr. G. Jaeger" in script, registered in United States Patent Office, September 14, 1909, No. 75243.

Picture of Dr. Jaeger in two concentric circles, registered in United States Patent Office, September 14, 1909, No. 75244.

Anchor device with the words "Benger Sohne" registered in United States Patent Office, May 2, 1911, No. 81754.

Concentric circles in square, the word "Pallas" and other lettering, registered in United States Patent Office, December 12, 1899, No. 33866.

The word "Pallas" registered in United States Patent Office, December 12, 1899, No. 33866.

The word "Rabana" in script, registered in United States Patent Office, July 8, 1913, No. 92475.

The word "Rabana" in script with "W. B. S." in rectangle, registered in United States Patent Office, December 23, 1913, No. 94683.

Anchor device with the words "W. Benger Sons & Company," registered in United States Patent Office, October 28, 1890, No. 18555.

Anchor device with the word "Columbia" above it, registered in United States Patent Office, February 21, 1893, No. 22488.

3. The label reading as follows:

"W. Benger Sons & Company
New York.
Made in U. S. A."

which said property was held by the Alien Property Custodian and at which sale said A. Schaap & Sons, together with their associate, S. Stemfeld Company, a New York co-partnership, composed of U. Stemfeld and Fred Seligman, having bid the sum of $154,000 which was the highest bid received for said property,

It is therefore ordered, that the Alien Property Custodian be, and he is authorized, and shall have the right to reject all bids at said sale including the bid of said A. Schaap & Sons, together with their associate, S. Stemfeld Company, a New York copartnership, composed of U. Stemfeld and Fred Seligman, and to resell such property in accordance with the provisions of the said "Trading with the enemy act," as amended, and the Executive orders and proclamations issued pursuant thereto.

The reason for the foregoing order is that the price bid for said property by the said A. Schaap & Sons and their associate, S. Stemfeld Company, to wit, the sum of $154,000, is inadequate and not the fair value of the property offered for sale.

Done in the District of Columbia, this 8th day of April, in the year of our Lord one thousand nine hundred and nineteen.

(Signed) FRANK L. POLK.

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**PLAINTIFF'S EXHIBIT No. 728-H.**

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A Determination, Order and Direction Concerning the Transfer, Release and Surrender of Certain Rights in and to 50,000 Shares of the Capital Stock of L. Vogelstein & Company, Inc., to Ludwig Vogelstein.

By virtue of the authority vested in the President by an Act of Congress entitled "An Act to define, reg-

ulate and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such Act in "An Act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses, and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by Executive Order No. 3016 and signed by the President on the third day of December, 1918, and

Whereas, evidence has been presented that Ludwig Vogelstein, being indebted for certain sums to Aron Hirsch & Sohn, of Halberstadt, Germany,—the amount of which cannot be stated with definiteness until an accounting between the said Ludwig Vogelstein and Aron Hirsch & Sohn after a treaty of peace between the United States and Germany, the said Aron Hirsch & Sohn, after investigation, having been hitherto determined by the Alien Property Custodian to be an enemy not holding a license issued by the President,—in order to secure the payment of such amount as on accounting should be found and determined to be due to the said Aron Hirsch & Sohn, did deposit in escrow 39,000 shares of stock of L. Vogelstein & Company, Inc., a New York corporation, belonging to him, the amount so found and determined to be due on such accounting to be paid and satisfied by dividing such stock between Ludwig Vogelstein and the said Aron Hirsch & Sohn in accordance with the amounts

so found to be due to them from Ludwig Vogelstein and it not appearing that Aron Hirsch & Sohn had knowledge of the deposit of the said shares as security as aforesaid or that they ratified or accepted the terms of the said deposit; and it appearing that the said Ludwig Vogelstein also deposited with trustees 10,000 shares of stock of L. Vogelstein & Company, Inc., belonging to him to secure the performance of a certain agreement between the said Ludwig Vogelstein and one Ernest G. Hothron; and that the said Ludwig Vogelstein also deposited with trustees 1,000 shares of stock of L. Vogelstein & Company, Inc., belonging to him, subject to his own order, the total number of the shares so deposited aggregating 50,000 and being all the capital stock issued and outstanding of said L. Vogelstein & Company, Inc.; and the Alien Property Custodian having heretofore demanded of said trustees that they convey to the Alien Property Custodian such right, title and interest in the said 50,000 shares as belonged to the said Aron Hirsch & Sohn; and said L. Vogelstein & Company, Inc., having thereafter transferred the said 50,000 shares upon its books to the Alien Property Custodian and having issued new certificates therefor, which are now in the possession of the Alien Property Custodian, I hereby in the public interest, make the following determination, direction and order:

The Alien Property Custodian may, and he is hereby authorized and directed to transfer, dispose of, release, surrender, and quitclaim to Ludwig Vogelstein, of the Borough of Manhattan, City of New York, all the rights which the Alien Property Custodian and Aron Hirsch & Sohn, or either of them, have acquired or may acquire by reason of the deposit of the said shares and the transfer of the same to the Alien Property Custodian as aforesaid, in and to 50,000 shares of

the capital stock of L. Vogelstein & Company, Inc., a corporation organized under the laws of the State of New York, upon such terms and conditions as the Alien Property Custodian, or his duly authorized agent, may deem proper; including but without limiting the generality of the foregoing, such terms and conditions as will secure the payment of Ludwig Vogelstein to the Alien Property Custodian of any indebtedness now owing, or hereafter determined to be owing by said Ludwig Vogelstein to the said Aron Hirsch & Sohn; and including the power to secure the aforesaid indebtedness of Ludwig Vogelstein to Aron Hirsch & Sohn, by causing the said 50,000 shares, or any part thereof so released to Ludwig Vogelstein, to be held as security for the payment of the said indebtedness under such form of trust agreement or otherwise as may seem proper to the Alien Property Custodian, or his duly authorized agent; and including the power to make such arrangements as the Alien Property Custodian deems expedient to prevent the said 50,000 shares of the capital stock of L. Vogelstein & Company, Inc., or any part thereof from passing into German hands or into German control for such period as may seem proper to the Alien Property Custodian.

My reasons in the public interest, for the foregoing determination, direction, order, rule and regulation are:

(a) The evidence presented shows that the sole interest of the Alien Property Custodian in said 50,000 shares of stock is the right to hold the same as collateral for the payment of said indebtedness of said Ludwig Vogelstein to Aron Hirsch & Sohn;

(b) That said Ludwig Vogelstein has offered to pay a portion of said indebtedness and secure the payment of the balance and has demanded the sur-

render and release to him of said 50,000 shares of stock and of all the right, title and interest therein of said Aron Hirsch & Sohn and of the Alien Property Custodian;

(c) That the only effective method whereby the indebtedness of said Ludwig Vogelstein to Aron Hirsch & Sohn, insofar as the same can now be determined, can be speedily liquidated is by the transfer, surrender, and release of said 50,000 shares of stock of L. Vogelstein & Company, Inc., and of the right, title and interest therein of said Aron Hirsch & Sohn and of the Alien Property Custodian, to said Ludwig Vogelstein, who will thereupon pay a portion of said indebtedness and secure the payment of the balance.

Done in the District of Columbia this 18th day of April, in the year of Our Lord One Thousand Nine Hundred and Nineteen, and of the Independence of the United States of America the One Hundred and Forty-third.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-I.

AN ORDER REJECTING THE BID OF CHARLES HAYDEN AND ASSOCIATES FOR VOTING TRUST CERTIFICATES REPRESENTING 34,644 SHARES OF THE CAPITAL STOCK OF THE AMERICAN METAL COMPANY, LIMITED, A NEW YORK CORPORATION OFFERED FOR SALE AT PUBLIC AUCTION ON APRIL 7, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THERETO.

By virtue of the authority vested in the President by "An act to define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with

the Enemy Act," and the amendment thereto embodied in "An act making appropriations to supply urgency deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years, on account of war expenses, and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order No. 3016 and signed by the President under the date of the third day of December, 1918, I hereby make the following determination and order:

Whereas, Francis P. Garvan, Alien Property Custodian, has reported to me that voting trust certificates issued under an agreement dated December 5, 1918, between owners of stock in The American Metal Company, Limited, of the first part, and Joseph F. Guffey, Henry Morgenthau and Berthold Hochschild, and others, of the second part, representing 34,644 shares, of the par value of One Hundred ($100) Dollars each, of the capital stock of The American Metal Company, Limited, a corporation organized and existing under the laws of the State of New York, were offered for sale to the highest bidder at public sale on April 7, 1919, at 10.30 o'clock a. m. at which sale the highest bid received for the said property was made by Charles Hayden, in behalf of himself and certain associates.

Now, therefore, I hereby authorize and direct the Alien Property Custodian to reject all bids received at the said sale, including the bid of the said Charles

Hayden and associates, and to resell such property in such manner and under such terms and conditions as I, or the President, may hereafter direct.

My reasons for the foregoing determination and order are:

(1) That the said Charles Hayden and associates have failed to furnish to the Alien Property Custodian evidence of the identity and of the qualification of all the persons interested in said bid under the provisions of the "Trading with the enemy Act";

(2) That it has been impossible for the Alien Property Custodian to complete his investigation as to the identity of, and the qualification of, the persons interested in said bid within the period of thirty days from the date of the sale of the said property, which is the period fixed by the terms of sale within which the said bid shall be accepted or rejected, the said Charles Hayden and associates, as such highest bidders, refusing to agree to any extension of the said period.

Done in the District of Columbia this the seventh day of May in the year of our Lord one thousand nine hundred and nineteen and of the independence of the United States of America the one hundred and forty-third.

FRANK L. POLK.

## PLAINTIFF'S EXHIBIT No. 728-J.

AN ORDER REJECTING THE BID OF ELMER C. BINDER FOR 1,008 SHARES OF THE CAPITAL STOCK OF ERNST GIDEON BEK, INC., A CORPORATION OF THE STATE OF NEW YORK, AND EVERY RIGHT, PRIVILEGE AND BENEFIT GIVEN TO ERNST GIDEON BEK BY THAT CERTAIN CONTRACT MADE AND ENTERED INTO, BY AND BETWEEN HIM AND ERNST GIDEON BEK, INC., ON, TO WIT: THE SIXTEENTH DAY OF APRIL, 1913, ALL OF WHICH WAS OFFERED FOR SALE AT PUBLIC AUCTION ON THE SECOND DAY OF MAY, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THERETO.

By virtue of the authority vested in the President by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order No. 3016 signed by the President under the third day of December 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian having offered at

public sale in the office of the Company at 15-17-19 Maiden Lane, New York City, in the State of New York, at 11 o'clock a. m. on the second day of May, the following property to wit:

(1) 837 shares of the common capital stock of Ernst Gideon Bek, Inc., a corporation of the State of New York, of the par value of $100 each, out of 1,008 shares of the common capital stock of said corporation, all of which are issued and outstanding.

(2) Every right, privilege and benefit which was given to Ernst Gideon Bek by that certain contract made and entered into, by and between the said Ernst Gideon Bek and Ernst Gideon Bek, Inc., on, to wit: the 16th day of April, 1913, (which said contract is embodied in the minutes of the incorporators and in the minutes of a meeting of the directors of the said corporation bearing the said date), including the right to have issued to the said Ernst Gideon Bek eleven shares of the capital stock of the said corporation out of a total of 1,019 shares provided in said contract to be issued; and also all accretions, accumulations and additions thereto and the income and profits derived therefrom by and in the hands of said corporation and also every right, title and claim for damages or compensation, or otherwise against said corporation growing out of said contract or growing out of any income or interest or profits derived therefrom.

At the same time and place, and as a part of the same sale, Elmer C. Binder, having offered seventy shares, Lawrence O. Binder seventy shares, Otto Herman Klebsattel thirty shares, and Emil Feyler one share of the capital stock of said company, being together with those offered by the Alien Property Custodian, all the outstanding shares of the capital stock of said company, at which sale the highest bid received for said property, including the 171 shares offered by

the private owners thereof, was the sum of $50,400 made by Elmer C. Binder.

It is therefore Ordered that the Alien Property Custodian be, and he is authorized, and shall have the right to reject all bids including the bid of the said Elmer C. Binder, and to resell such property, but only to American citizens at public sale to the highest bidder after public advertisement of the time and place of sale which shall be where the property or a major portion thereof is situated, as provided by the "Trading with the Enemy Act," as amended, and the executive orders and proclamations issued pursuant thereto.

The reason for the foregoing order is that the price bid for said property by the said Elmer C. Binder, to wit: the sum of $50,400 is inadequate and not the fair value of the property offered for sale.

Done in the District of Columbia, this, the 28th day of May, in the year of our Lord one thousand nine hundred and nineteen, and of the independence of the United States of America the one hundred and forty-third.

FRANK L. POLK.

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**PLAINTIFF'S EXHIBIT No. 728-K.**

A DETERMINATION, ORDER AND DIRECTION CONCERNING THE TRANSFER, RELEASE AND SURRENDER OF CERTAIN RIGHTS IN AND TO CERTAIN SHARES OF THE CAPITAL STOCK OF NEW ENGLAND WASTE COMPANY, AND OTHER STOCKS, BONDS AND SECURITIES, TO ADOLF LEVE, ET ALS.

1. By virtue of the authority vested in the President by an act of Congress entitled "An Act to Define, Regulate and Punish Trading with the Enemy,

and for other Purposes," approved October 6, 1917, and known as the "Trading with the Enemy Act," and the amendment to such Act in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses, and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years, on account of war expenses, and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by Executive Order No. 3016, signed by the President on the third day of December, 1918;

2. Whereas, evidence has been presented that Adolf Leve of Boston, Suffolk County, Massachusets, and five certain corporations, viz., the New England Waste Company, W. Wolf and Sons, the American Linters Company, the American Products Company, ad the Oversea Trading Company, all corporations located and having an office for the transaction of business in said Boston, either, each or all of them, may be indebted to W. Wolf and Soehne, a German copartnership of Stuttgart, Germany, the fact and amount of which indebtedness cannot be definitely ascertained until a full and final accounting between the said Adolf Leve, the said five corporations, and the said W. Wolf and Soehne after the treaty of peace between the United States and Germany, and the said W. Wolf and Soehne after investigation having heretofore been determined by the Alien Property Custodian to be an enemy not holding a license issued by the President; and

3. Whereas, pursuant to a request of the Alien Property Custodian, said Adolf Leve, his wife Claudine H. Leve, and said five corporations, heretofore filed certain reports with the Alien Property Custodian, as from the records of his office will more fully appear, but under protest and subject to certain reservations stated in said reports; and

4. Whereas, pursuant to the demands of the Alien Property Custodian, but under protest and subject to the reservations stated in said reports, certain shares of stock of the said five corporations, and certain other stocks, bonds and securities, a full list of which immediately follow, were transferred and surrendered to the Alien Property Custodian, and are now in the possession or control of the Alien Property Custodian, viz.:

997 shares of common capital stock of W. Wolf & Sons in name of Claudine H. Leve.

1 share of common capital stock of W. Wolf & Sons in name of Adolf Leve.

463 shares of common capital stock of American Linters Co. in the name of Adolf Leve.

4,001 shares of common capital stock of New England Waste Co. in name Adolf Leve.

5,997 shares of common capital stock of New England Waste Co. in name of Claudine H. Leve.

$70,100 St. Louis, San Francisco Ry. Co. Prior Lien 4 per cent Bonds in name of Claudine H. Leve.

$79,450 St. Louis, San Francisco Ry. Co. Adj. mtg. 6 per cent Bonds in name of Claudine H. Leve.

$140,200 St. Louis, San Francisco Ry. Co. Inc. mtg. 6 per cent Bonds in name of Claudine H. Leve.

50 shares common stock of J. S. Young Co. in name of Claudine H. Leve.

300 shares preferred stock of S. A. L. in name of Adolf Leve.

100 shares Cleveland, Cinc. Ch. & St. Louis Ry. in name of Claudine H. Leve.

44 shares Savoy Oil Co. in name of Claudine H. Leve.

25 shares G. W. Helme Co. in name of Millicent Leve.

50 shares Continental Gas & Oil Co. in name of Felice Leve.

44 shares of Savoy Oil Co. in name of Claudine H. Leve.

50 shares Electric Property Corp. in name of Felice Leve.

3 shares Olympia Theatre in name of Claudine H. Leve.

25 shares Arlington Mills in name of Claudine H. Leve.

25 shares Arcadia Mills in name of Claudine H. Leve.

50 shares Sears Roebuck & Co. in name of Claudine H. Leve.

50 shares Goodyear Tire Co. in name of Claudine H. Leve.

97 shares common stock of Am. Products Co. in name of Claudine H. Leve.

1 share common stock of Am. Products Co. in name of Adolf Leve.

1 share common stock of Am. Products Co. in name of Lewis P. Sladen.

1 share common stock of Am. Products Co. in name of George E. Lund.

97 shares common stock Oversea Trading Co. in name of Claudine H. Leve.

1 share common stock Oversea Trading Co. in name of Adolf Leve.

1 share common stock Oversea Trading Co. in name of Lewis P. Sladen.

1 share common stock Oversea Trading Co. in name of George E. Lund.

And also a dividend of ten per cent (10%) in the sum of One Hundred Thousand ($100,000) Dollars, declared by the New England Waste Company at a meeting of its Board of Directors held April 7, 1919, payable on April 15, 1919, in United States 4¼% Liberty Bonds to stockholders of record on April 8, 1919, which said dividend has been paid to the Commonwealth Trust Company, of Boston, Massachusetts, as Depositary for the Alien Property Custodian, and is now in its possession.

5. I hereby in the public interest make the following

DETERMINATION, DIRECTION AND ORDER.

The Alien Property Custodian may, and he is hereby authorized and directed, to transfer, dispose of, release, surrender and quitclaim to said Adolf Leve, said Claudine H. Leve, Adolph Leve, as the duly appointed and qualified guardian for Millicent Leve and Felice Leve, the two minor children of said Adolf and Claudine H. Leve, and to Lewis P. Sladen and George E. Lund, all of said Boston, as their respective interests may appear on the foregoing list, all the right, title and interest which the Alien Property Custodian and said W. Wolf and Soehne, or either of them, have acquired, or may acquire, by reason of said demands for said stocks, bonds and securities, and the transfer and surrender of the same to the Alien Property Custodian, in and to 9998 shares of the capital stock of the New England Waste Company, 463 shares of the capital stock of the American Linters Company, 998 shares of the capital stock of W. Wolf and Sons, 100 shares of the capital stock of American Products Company, 100 shares of the capital stock of

Oversea Trading Company, and the remaining stocks, bonds and securities mentioned in said list, upon such terms and conditions as the Alien Property Custodian or his duly authorized agent, may deem proper, including, but without limiting the generality of the foregoing, such terms and conditions as will secure the payment by said Adolf Leve and said five corporations, or any of them, to the Alien Property Custodian, or his successor in office, of any indebtedness now owing, or hereafter, on such accounting, determined to be then owing, by said Adolf Leve, and said five corporations, or any of them, to said W. Wolf and Soehne; and including the power to secure the aforesaid indebtedness of Adolf Leve, if any, and said five corporations, or any of them, to W. Wolf and Soehne, by causing the said stocks, bonds and securities mentioned in the list aforesaid, or any part thereof, so released to said Adolf Leve, Claudine H. Leve, Adolf Leve as guardian of Millicent Leve and Felice Leve, Lewis P. Sladen, and George E. Lund, as aforesaid, to be held as security for the payment of the said indebtedness, if any, under such form of trust agreement, or otherwise, as may seem proper to the Alien Property Custodian, or his duly authorized agent; and including the power to make such arrangements as the Alien Property Custodian, or his successor in office, deems expedient, to prevent said shares of the capital stock of said five corporations, or any part thereof, from passing into German hands, or into German control, for such period as may seem proper to the Alien Property Custodian, or his successor in office.

6. My reasons in the public interest for the foregoing determination, direction, order, rule and regulation are: (a) The evidence presented shows that the interest of the Alien Property Custodian in said stocks, bonds and securities may be merely the right

to hold the same as collateral for the payment of such indebtedness, if any, of Adolf Leve and said five corporations, or any of them, to said W. Wolf and Soehne; (b) that said Adolf Leve has offered to pay, or cause to be paid, after accounting, whatever sum, if any, is found to be due from him and each of said five corporations, or any of them, to said W. Wolf and Soehne, and has offered to secure the payment of same; (c) that the most effective method whereby the indebtedness, if any, of said Adolf Leve and said five corporations, or any of them, to said W. Wolf and Soehne, in so far as the same can now be determined, can be speedily and safely liquidated is by the transfer, surrender and release of said stocks, bonds and securities, and the right, title and interest therein of said W. Wolf and Soehne, and of the Alien Property Custodian; said Adolf Leve thereupon agreeing to pay, or cause to be paid, said indebtedness, if any, and to secure the payment of the same.

Done at the District of Columbia this 28th day of May, in the year of our Lord One Thousand Nine Hundred and Nineteen, and of the independence of the United States of America the One Hundred and Forty-third.

FRANK L. POLK.

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**PLAINTIFF'S EXHIBIT No. 728-L.**

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A DETERMINATION, ORDER AND DIRECTION CONCERNING THE DISPOSITION OF A CERTAIN RETROCESSION ARRANGEMENT BETWEEN THE FIRST REINSURANCE COMPANY OF HARTFORD, CONNECTICUT, AND THE MUNICH REINSURANCE COMPANY OF MUNICH, BAVARIA.

By virtue of the authority vested in the President by an Act of Congress entitled "An Act to de-

fine, regulate and punish trading with the enemy and for other purposes, approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such Act in "An Act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses, and for other purposes," approved March 28th, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by Executive Order No. 3016 and signed by the President on the third day of December, 1918, and

Whereas, evidence has been presented that a retrocession arrangement for life insurance was entered into between the First Reinsurance Company of Hartford, Connecticut, and the Munich Reinsurance Company of Munich, Bavaria, under which arrangement there was automatically retroceded to the Munich Reinsurance Company a certain proportion of all insurance on lives assumed by the said First Reinsurance Company; and

Whereas, the Alien Property Custodian has determined the said Munich Reinsurance Company to be an enemy not holding a license granted by the President, and has seized all the right, title and interest of said Munich Reinsurance Company arising in favor of the said Munich Reinsurance Company by reason of the said arrangement;

I hereby make the following direction, order, rule and regulation:

The Alien Property Custodian may, and he is

hereby ordered and directed to dispose of any and all rights accruing to the said Munich Reinsurance Company against the said First Reinsurance Company under the said general retrocession arrangement subsequent to April 6, 1917, by discharging the said First Reinsurance Company of all obligations to the said Munich Reinsurance Company thereunder, and receiving a similar discharge from the said First Reinsurance Company to the said Munich Reinsurance Company of all obligations accruing in favor of the said First Reinsurance Company thereunder, but without disposing of any rights and/or obligations of the Munich Reinsurance Company in respect to the individual insurance contracts retroceded by the said First Reinsurance Company to the said Munich Reinsurance Company prior to April 6, 1917, under the said general retrocession arrangement.

My reasons, in the public interest, for the foregoing direction, order, rule and regulation are:

(a) That the aforesaid general retrocession arrangement between the said First Reinsurance Company and the said Munich Reinsurance Company was terminated at and abrogated by the declaration of war between the United States and Germany except as to the respective rights and obligations of the said First Reinsurance Company and the said Munich Reinsurance Company as to the insurance on lives retroceded by the said First Reinsurance Company to the said Munich Reinsurance Company prior to April 6, 1917 under such retrocession arrangement.

(b) That the only property or claim of any value taken over by the Alien Property Custodian by virtue of the aforesaid requirement and seizure is the obligation in favor of the said Munich Reinsurance Company in respect to insurance on lives retroceded by the said First Reinsurance Company to the said Mu-

nich Reinsurance Company prior to April 6, 1917, under such retrocession arrangement.

Done in the District of Columbia this 28th day of May in the year of Our Lord One Thousand Nine Hundred and Nineteen, and of the Independence of the United States of America the One Hundred and Forty-third.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-M.

AN ORDER REJECTING THE BID OF WM. L. WALTHER, GEORGE ROSSEN, CLEMENT H. BETTS AND ROBERT H. GOODWIN FOR TWENTY SHARES OF THE CAPITAL STOCK OF THE ASSOCIATED OPERATING COMPANY OF NEW YORK OFFERED FOR SALE AT PUBLIC AUCTION ON MAY 13, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendments to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes" approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order 3016 and signed by the President under

the third day of December, 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian having offered for sale at public auction in the city of New York, State of New York, at 11 o'clock A. M. on the 13th day of May, 1919, 20 shares of the capital stock of the Associated Operating Company, a New York Corporation of the par value of $100 per share, out of a total authorized and issued capitalization of 50 shares of the par value of $100 per share, which said property was held by the Alien Property Custodian, at which sale Wm. L. Walther, George Rossen, Clement H. Betts and Robert H. Goodwin were the highest bidders, having bid the sum of $5,000 which was the highest bid received for said property.

It is therefore ordered, that the Alien Property Custodian be, and he is authorized, and shall have the right to reject all bids at said sale, including the bid of the said Wm. L. Walther, George Rossen, Clement H. Betts, and Robert H. Goodwin, and to resell such property in accordance with the provisions of the said "Trading with the Enemy Act," as amended, and the Executive Orders and proclamations issued pursuant thereto.

The reason for the foregoing order is that the price bid for said property by the said Wm. L. Walther, George Rossen, Clement H. Betts, and Robert H. Goodwin, to wit: $5,000 is inadequate and not the fair value of the property offered for sale.

Done in the District of Columbia, this 10th day of June, 1919.

FRANK L. POLK.

## PLAINTIFF'S EXHIBIT No. 728-N.

AN ORDER FOR THE SALE OF ONE HUNDRED AND TWENTY-FOUR (124) SHARES OF THE COMMON CAPITAL STOCK OF THE LA SALLE PORTLAND CEMENT COMPANY, A CORPORATION OF THE STATE OF ILLINOIS, AT PRIVATE SALE, STATING THE REASONS THEREFOR IN THE PUBLIC INTEREST.

By virtue of the authority vested in the President by an Act to define, regulate and punish trading with the enemy and for other purposes, approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendment to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order No. 3016 and signed by the President on the 3rd day of December, 1918, I hereby, in the public interest, make the following determination and order:

The Alien Property Custodian is hereby authorized to sell at private sale without public or other advertisement, one hundred twenty-four (124) shares of the common capital stock of the La Salle Portland Cement Company, an Illinois Corporation, provided, however, that the price of two hundred eighty-six dollars ($286.00) per share can be obtained therefor.

My reasons for the foregoing determination, order, rule and regulation, are:

(1) Three thousand six hundred and thirty-seven (3,637) shares, being all but one hundred twenty-four (124) of the shares of this corporation held by the Alien Property Custodian, were by him offered for sale on the tenth day of March, 1919, at public sale to the highest bidder after public advertisement of the time and place of sale. The highest bid received for this stock was two hundred eighty-six (286) dollars per share. This bid, after careful investigation, has been held to be adequate and the sale has been consummated accordingly.

(2) In view of the circumstances, a public sale of the additional one hundred twenty-four shares, conducted pursuant to the terms of the "Trading with the Enemy Act" relevant to such sales, would result in unnecessary and wasteful expenditures being made and in payment of avoidable costs, thereby reducing the net amount to be paid into the Treasury of the United States of America.

Done in the District of Columbia, this 18th day of June in the year of our Lord One Thousand Nine Hundred and Nineteen, and of the independence of the United States of America the one hundred and forty-third.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-O.

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ORDER PRESCRIBING ADDITIONAL RULES AND REGULATIONS AND MAKING CERTAIN DETERMINATIONS RESPECTING THE EXERCISE OF THE POWERS AND AUTHORITY OF THE ALIEN PROPERTY CUSTODIAN.

By virtue of the authority vested in the President by an Act of Congress entitled "An Act to define, reg-

ulate and punish trading with the enemy and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act" and the amendment to such Act in "An Act making appropriations to supply urgent deficiencies in the appropriations for the fiscal year ending June 30, 1918, and prior fiscal years on account of war expenses, and for other purposes," approved March 28, 1918, and the amendment to such Act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1919, and prior fiscal years on account of war expenses and for other purposes" approved November 6, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by Executive Order No. 3016 and signed by the President on the third day of December, 1918.

I hereby make the following orders, rules, regulations and determinations:

The Alien Property Custodian shall have the power, in and about the conduct, management and liquidation of any insurance company, or in connection with any retrocession or reinsurance contract, which he holds, manages, administers, protects, preserves or controls under, pursuant to, or by virtue of the Act known as the "Trading with the Enemy Act," as amended, and the Proclamations and Executive Orders issued in pursuance thereof, to sell at private sale, without public or other advertisement any stocks, beneficial interests in stocks, including voting trust certificates and all other rights appurtenant to the ownership of stocks, bonds, negotiable instruments or evidences of indebtedness, and maps, in parcels, lots or quantities having a market value at the time of sale not exceeding fifty thousand dollars ($50,000) for each parcel, lot, or quantity sold. Any such sale may be conducted at such place and upon such terms and con-

ditions as to the Alien Property Custodian, or his authorized agent may seem proper.

The Executive Order of November 12, 1918, defined as "Executive Order prescribing additional rules and regulations and making certain determinations respecting the exercise of the powers and authority and the performance of the duties of the Alien Property Custodian," is not to be construed as modified or changed in any respect by this Executive Order, except that portion of paragraph six (6) of said Order which relates to the amount in which lots or parcels of stocks, bonds, negotiable instruments, or evidences of indebtedness, and maps can be sold.

The reason in the public interests for the foregoing determination, order, rule and regulation is that the properties above described cannot generally be sold to the best advantage in lots or parcels not in excess of ten thousand dollars ($10,000).

Done in the District of Columbia this 24th day of June in the year of our Lord, One Thousand Nine Hundred and Nineteen, and of the Independence of the United States of America the One Hundred and Forty-third.

FRANK L. POLK.

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**PLAINTIFF'S EXHIBIT No. 728-P.**

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AN ORDER REJECTING THE BID OF JOHANNES MEYER FOR TWO HUNDRED TWENTY-FIVE SHARES OF THE CAPITAL STOCK OF VIGILANT MILLS, A PENNSYLVANIA CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON JUNE 7, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by "An Act to define, regulate and punish trading with the enemy, and for other purposes," approved

October 6, 1917, known as the "Trading with the Enemy Act," and the amendments to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated to me by the Executive Order 3016 and signed by the President under the third day of December, 1918, I hereby, in the public interest, make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the city of Frankford, State of Pennsylvania, at 11:30 a. m. on the seventh day of June, 1919, two hundred and twenty-five shares of the capital stock of Vigilant Mills, a Pennsylvania corporation, of the par value of $100 per share, out of a total and issued capitalization of five hundred shares;

Whereas, said property was held by the Alien Property Custodian, and

Whereas, Johannes Meyer made the highest bid which was received for said property, having bid the sum of $60,000.

It is therefore, ordered, that the Alien Property Custodian be, and he is authorized and shall have the right to reject all bids at said sale, including the bid of said Johannes Meyer, and to resell said property in accordance with the provisions of the said "Trading with the Enemy Act" and the Executive Orders issued pursuant thereto.

The reason for the foregoing order is that the price

bid for said property by the said Johannes Meyer, to wit, $60,000, is inadequate and not a fair value of the property offered for sale.

Done in the District of Columbia, this eighth day of July, in the year of our Lord one thousand nine hundred and nineteen, and of the independence of the United States of America, the one hundred forty-fourth.

FRANK L. POLK.

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## PLAINTIFF'S EXHIBIT No. 728-Q.

AN ORDER REJECTING THE BID OF GUSTAV KREMER FOR SEVEN HUNDRED THIRTY-FIVE SHARES OF THE CAPITAL STOCK OF PASS-KREMER HATBAND MANUFACTURING COMPANY, INC., A NEW JERSEY CORPORATION, OFFERED FOR SALE AT PUBLIC AUCTION ON MAY 29, 1919, PURSUANT TO THE "TRADING WITH THE ENEMY ACT" AND AMENDMENTS THEREOF.

By virtue of the authority vested in the President by "An Act to define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the Enemy Act," and the amendments to such Act embodied in "An Act making appropriations to supply urgent deficiencies in appropriations for the fiscal year ended June 30, 1918, and prior fiscal years on account of war expenses and for other purposes," approved March 28, 1918, and the amendment to such act embodied in "An Act making appropriations to supply deficiencies in appropriations for the fiscal year ended June 30, 1919, and prior fiscal years on account of war expenses and for other purposes," approved November 4, 1918, to make certain orders such as that herein contained, which authority has been delegated

to me by the Executive Order 3016 and signed by the President under the third day of December, 1918, I hereby, in the public interest, make the following determination and order:

Whereas, the Alien Property Custodian offered for sale at auction in the City of Paterson, State of New Jersey, at 11.00 a. m. on the 29th day of May, 1919, seven hundred and thirty-five shares of the capital stock of Pass-Kremer Hatband Manufacturing Company, Inc., a New Jersey corporation, of the par value of $100 per share, out of a total and issued capitalization of fifteen hundred shares;

Whereas, said property was held by the Alien Property Custodian, and

Whereas, Gustav Kremer made the highest bid which was received for said property, having bid the sum of $73,500.

It is therefore, ordered, that the Alien Property Custodian be, and he is authorized and shall have the right to reject all bids at said sale, including the bid of Gustav Kremer, and to re-sell said property under the provisions of the "Trading with the Enemy Act," as amended, and the Executive Orders and Proclamations issued pursuant thereto.

The reason for the foregoing order is that the price bid for the said property by the said Gustav Kremer, to wit, $73,500, is inadequate and not the fair value of the property offered for sale.

Done in the District of Columbia this eighth day of July, in the year of our Lord one thousand nine hundred and nineteen, and of the independence of the United States of America, the one hundred and forty-fourth.

FRANK L. POLK.

**PLAINTIFF'S EXHIBIT No. 729.**

## PROCLAMATIONS.

GERMANS AND AUSTRO-HUNGARIANS IN THE CUSTODY OF THE WAR DEPARTMENT INCLUDED WITHIN THE TERM "ENEMY" FOR THE PURPOSES OF THE TRADING WITH THE ENEMY ACT.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1427.]

Whereas paragraph (c) of Section Two of the Act entitled "An Act To define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the Trading with the Enemy Act, provides that the word "enemy" as used therein shall be deemed to mean, for the purposes of such trading and of said Act, in addition to the individuals, partnerships or other bodies of individuals or corporations specified in paragraph (a), and in addition to the Government and political or municipal subdivisions, officers, officials, agents or agencies thereof specified in paragraph (b), of said Section Two, the following:

"Such other individuals, or body or class of individuals, as may be natives, citizens, or subjects of any nation with which the United States is at war, other than citizens of the United States, wherever resident or wherever doing business, as the President, if he shall find the safety of the United States or the successful prosecution of the war shall so require, may, by proclamation, include within the term 'enemy;'"

And whereas, under the provisions of and by virtue of the power and authority granted in Sections four thousand and sixty-seven, four thousand and sixty-eight, four thousand and sixty-nine, and four

thousand and seventy, of the Revised Statutes, and in accordance with the proclamations and regulations which have been or may hereafter be made and established thereunder by the President of the United States, certain alien enemies have been, or may from time to time be, transferred after arrest into the custody of the War Department for detention during the war;

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the authority vested in me, and in accordance with the provisions of the said Act of October 6, 1917, known as the Trading with the Enemy Act, do hereby find that the safety of the United States and the successful prosecution of the present war require that all natives, citizens or subjects of the German Empire or of the Austro-Hungarian Empire who, by virtue of the provisions of Sections four thousand and sixty-seven, four thousand and sixty-eight, four thousand and sixty-nine, and four thousand and seventy, of the Revised Statutes, and of the proclamations and regulations thereunder, have been heretofore or may be hereafter transferred after arrest into the custody of the War Department for detention during the war, shall be included within the meaning of the word "enemy" for the purposes of the Trading with the Enemy Act and of such trading; and I do hereby proclaim to all whom it may concern that every such alien enemy who is so transferred, after arrest, into the custody of the War Department for detention during the war, shall be and hereby is included within the meaning of the word "enemy" and shall be deemed to constitute an "enemy" for said purposes.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia, this 5th day of February, in the year of our Lord one thousand nine

hundred and eighteen, and of the independence of the United States the one hundred and forty-second.

(Seal.) WOODROW WILSON.

By the President:
FRANK L. POLK,
*Acting Secretary of State.*

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## PLAINTIFF'S EXHIBIT No. 729-A.

CERTAIN CITIZENS OR SUBJECTS OF GERMANY OR AUSTRIA-HUNGARY INCLUDED AS "ENEMIES" FOR PURPOSES OF TRADING WITH THE ENEMY ACT; REPORTS REQUIRED AS TO THEIR PROPERTY.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1454.]

Whereas paragraph (c) of Section Two of the Act entitled "An Act To define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the Trading with the enemy Act, provides that the word "enemy" as used therein shall be deemed to mean, for the purpose of such trading and of said Act, in addition to the individuals, partnerships, or other bodies of individuals or corporations specified in paragraph (a), and in addition to the Government and political or municipal subdivisions, officers, officials, agents or agencies thereof specified in paragraph (b), of said Section Two, the following:

"Such other individuals, or body or class of individuals, as may be natives, citizens, or subjects of any nation with which the United States is at war, other than citizens of the United States, wherever resident or wherever doing business, as the President, if he

shall find the safety of the United States or the successful prosecution of the war shall so require, may, by proclamation, include within the term 'enemy' '';

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the authority vested in me, and in accordance with the provisions of the said Act of October 6, 1917, known as the Trading with the enemy Act, do hereby find that the safety of the United States and the successful prosecution of the present war require that,

(1) Any woman, wherever resident outside of the United States, who is a citizen or subject of any nation with which the United States is at war and whose husband is either (a) an officer, official or agent of the government of any nation with which the United States is at war, or (b) resident within the territory (including that occupied by the military or naval forces) of any nation with which the United States is at war, or (c) resident outside of the United States and doing business within such territory; and

(2) All citizens or subjects of any nation with which the United States is at war (other than citizens of the United States) who have been or shall hereafter be detained as prisoners of war, or who have been or shall hereafter be interned by any nation which is at war with any nation with which the United States is also at war; and

(3) Such other individuals or body or class of individuals as may be citizens or subjects of any nation with which the United States is at war (other than citizens of the United States) wherever resident outside of the United States, or wherever doing business outside of the United States, who since the beginning of the war have disseminated, or shall hereafter disseminate propaganda calculated to aid the cause of any such nation in such war, or to injure the cause of the United States in such war, or who since the beginning

of the war has assisted or shall hereafter assist in plotting or intrigue against the United States, or against any nation which is at war with any nation which is at war also with the United States; and

(4) Such other individuals or body or class of individuals as may be citizens or subjects of any nation with which the United States is at war wherever resident outside of the United States, or wherever doing business outside of the United States, who are or may hereafter be included in a publication issued by the War Trade Board of the United States of America, entitled "Enemy Trading List;" and the term "body or class of individuals" as herein used shall include firms and co-partnerships contained in said enemy trading list of which one or more of the members or partners shall be citizens or subjects of any nation with which the United States is at war; and

(5) Any citizen or subject of any nation with which the United States is at war wherever resident outside of the United States, who has been at any time since August 4, 1914, resident within the territory (including that occupied by the military or naval forces) of any nation with which the United States is at war, shall all be included within the meaning of the word "enemy" for the purposes of the "Trading with the enemy Act" and of such trading; and I do hereby proclaim to all whom it may concern that every such individual or body or class of individuals herein referred to shall be and hereby is included within the meaning of the word "enemy" and shall be deemed to constitute an "enemy" for said purposes.

And by virtue of further authority vested in me by said Act entitled "An Act To define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, and known as the Trading with the enemy Act, I hereby make the following order, rule and regulation:

I hereby require that, pursuant to the provisions of subsection (a) of section seven of said "Trading with the enemy Act," every corporation incorporated within the United States, and every unincorporated association, or company, or trustee, or trustees within the United States, issuing shares or certificates representing beneficial interests, shall transmit to the Alien Property Custodian a full list of every officer, director, or stockholder known to be, or whom the representative of such corporation, association, company or trustee may have reasonable cause to believe to be, included by the above proclamation within the term "enemy," together with a statement of the amount of stock or shares owned by each such officer, director, or stockholder, or in which he has any interest; and any person in the United States who holds or has or shall hold or have custody or control of money or other property, beneficial or otherwise, alone or jointly with others, of, for, by, on account of or on behalf of, or for the benefit of, and any person within the United States, who is or shall be indebted in any way to, any person included by the above proclamation within the term "enemy," or any person whom he may have reasonable cause to believe to be so included, shall report the fact to the Alien Property Custodian.

Such lists, statements and reports shall be made and transmitted to the Alien Property Custodian, in such form and under such rules and regulations as he may prescribe within thirty days after the date of this order, or within thirty days after money or other property owing or belonging to or held for, by, on account of or on behalf of, or for the benefit of any such "enemy" shall come within the custody or control of the reporter, or within thirty days after any person shall become an "enemy" by virtue of the terms of the above proclamation.

In witness whereof, I have hereunto set my hand

and caused the seal of the United States to be affixed.

Done in the District of Columbia this 31st day of May, in the year of our Lord one thousand nine hundred and eighteen and of the independence of the United States the one hundred and forty-second.

(Seal.) WOODROW WILSON.

By the President:

ROBERT LANSING,
*Secretary of State.*

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## PLAINTIFF'S EXHIBIT No. 729-B.

TITLE TO AND POSSESSION OF PROPERTY ON THE HUDSON RIVER OWNED BY THE NORTH GERMAN LLOYD DOCK COMPANY AND THE HAMBURG-AMERICAN LINE TERMINAL AND NAVIGATION COMPANY.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1464.]

Whereas the Act of Congress making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses and for other purposes, approved March 28, 1918 (Public—No. 109—65th Congress), contains the following provisions:

"The President is authorized to acquire the title to the docks, piers, warehouses, wharves, and terminal equipment and facilities on the Hudson River now owned by the North German Lloyd Dock Company and the Hamburg-American Line Terminal and Navigation Company, two corporations of the State of New Jersey, if he shall deem it necessary for the national security and defense: *Provided*, That if such property can not be procured by purchase, then the President

is authorized and empowered to take over for the United States the immediate possession and title thereof. If any such property shall be taken over as aforesaid, the United States shall make just compensation therefor to be determined by the President. Upon the taking over of said property by the President, as aforesaid, the title to all such property so taken over shall immediately vest in the United States: *Provided further,* That section three hundred and fifty-five of the Revised Statutes of the United States shall not apply to any expenditures herein or hereafter authorized in connection with the property acquired."

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the authority vested in me by the said Act of Congress approved March 28, 1918, do hereby determine and declare that the acquisition of title to the foregoing docks, piers, warehouses, wharves, and terminal equipment and facilities, is necessary for the National security and defense, and I do hereby take over for the United States of America the immediate possession and title thereof, including all leaseholds, easements, rights of way, riparian rights and other rights, estates and interests therein or appurtenant thereto.

Just compensation for the property hereby taken over will be hereafter determined and paid.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia, this twenty-eighth day of June, one thousand nine hundred and eighteen, and of the Independence of the United States, one hundred and forty-two.

(Seal.) WOODROW WILSON.

By the President:

ROBERT LANSING,

*Secretary of State.*

## PLAINTIFF'S EXHIBIT No. 729-C.

MARINE AND WAR RISK INSURANCE BY GERMAN COMPANIES PROHIBITED.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1386.]

Whereas, certain insurance companies, incorporated under the laws of the German Empire, have been admitted to transact the business of marine and war risk insurance in various States of the United States, by means of separate United States Branches established pursuant to the laws of such States, and are now engaged in such business under the supervision of the Insurance Departments thereof, with assets in the United States deposited with Insurance Departments or in the hands of resident trustees, citizens of the United States, for the protection of all policy-holders in the United States;

And whereas, the nature of marine and war risk insurance is such that those conducting it must of necessity be in touch with the movements of ships and cargoes, and it has been considered by the Government of great importance that this information should not be obtained by alien enemies;

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the powers vested in me as such, hereby declare and proclaim that such branch establishments of German Insurance Companies now engaged in the transaction of business in the United States pursuant to the laws of the several States are hereby prohibited from continuing the transaction of the business of marine and war risk insurance either as direct insurers or re-insurers; and all individuals, firms, and insurance companies incorporated under the laws of any of the States or Ter-

ritories of the United States, or of any foreign country, and established pursuant to the laws of such States and now engaged in the United States in the business of marine and war risk insurance either as direct insurers or re-insurers are hereby prohibited from re-insuring with companies incorporated under the laws of the German Empire, no matter where located; and all persons in the United States are prohibited from insuring against marine or war risks with insurance companies incorporated under the laws of the German Empire or with individuals, firms, and insurance companies incorporated under the laws of any of the States or Territories of the United States or of any foreign country and now engaged in the business of marine or war risk insurance in the United States, which re-insure business originating in the United States with companies incorporated under the laws of the German Empire, no matter where located.

The foregoing prohibitions shall extend and operate as to all existing contracts for insurance and re-insurance which are hereby suspended for the period of the war, except that they shall not operate to vitiate or prevent the insurance or re-insurance of, and the payment or receipt of, premiums on insurance or re-insurance under existing contracts on vessels or interest at risk on the date of this proclamation, and such insurance or re-insurance, if for a voyage, shall continue in force until arrival at destination, and if for time, until thirty days from the date of this proclamation, but if on a voyage at that time, until the arrival at destination..

Nothing herein shall be construed to operate to prevent the payment or receipt of any premium, return premium, or claim now due or which may become due on or in respect to insurances or re-insurances not prohibited by this proclamation.

That all funds of such German companies now in the possession of their managers or agents, or which

shall hereafter come into their possession, shall be subject to such rules and regulations concerning the payment and disposition thereof as shall be prescribed by the insurance supervising officials of the State in which the principal office of such establishment in the United States is located, but in no event shall any funds belonging to or held for the benefit of such companies be transmitted outside of the United States, nor be used as the basis for the establishment, directly or indirectly, of any credit within or outside of the United States to or for the benefit or use of the enemy or any of his allies without the permission of this Government.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the District of Columbia this thirteenth day of July in the year of our Lord one thousand nine hundred and seventeen and of the Independence of the United States the one hundred and forty-second.

(Seal.) WOODROW WILSON.

By the President:

FRANK L. POLK,

*Acting Secretary of State.*

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## PLAINTIFF'S EXHIBIT No. 729-D.

CERTAIN INDIVIDUALS, AND BODIES AND CLASSES OF INDIVIDUALS INCLUDED WITHIN THE TERM "ENEMY" FOR THE PURPOSES OF THE TRADING WITH THE ENEMY ACT.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1475.]

Whereas, section 2 of the Act of Congress entitled, "An Act To define, regulate, and punish trading with

the enemy, and for other purposes" approved October 6, 1917, known as the "Trading with the enemy Act," provides that the word "enemy" as used therein shall be deemed to mean for the purposes of such trading and of said Act:

"Such other individuals, or body or class of individuals, as may be natives, citizens, or subjects of any nation with which the United States is at war, other than citizens of the United States, wherever resident or wherever doing business, as the President, if he shall find the safety of the United States or the successful prosecution of the war shall so require, may, by proclamation, include within the term 'enemy;' "

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the authority vested in me by said Act, and in accordance with the provisions thereof, do find hereby that the following named individuals, and bodies and classes of individuals, are natives, citizens, or subjects of a nation with which the United States is at war, and that the safety of the United States and the successful prosecution of the war require that said individuals, and bodies and classes of individuals, be included within the term "enemy," as used in said Act; and therefore I do include hereby within said term "enemy" as used in said Act, the following individuals, and bodies and classes of individuals, to wit:

(1) George Benda, a partnership heretofore doing business in the United States, with its main plant at Boonton, New Jersey, and heretofore composed of Adolph Neubauer and Eugene Kirschbaum, as copartners;

(2) Adolph Neubauer, heretofore one of the members of the partnership of George Benda.

(3) Eugene Kirschbaum, heretofore one of the members of the partnership of George Benda.

(4) A. W. Faber, a partnership heretofore doing business in the United States with its main plant at

Newark, New Jersey, and heretofore composed of Count Alexander von Faber-Castell and Countess Ottilie von Faber-Castell, as co-partners.

(5) Count Alexander von Faber-Castell, heretofore one of the members of the partnership of A. W. Faber.

Countess Ottilie von Faber-Castell, heretofore one of the members of the partnership of A. W. Faber.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia, this 10th day of August, in the year of our Lord one thousand nine hundred and eighteen, and of the independence of the United States the one hundred and forty-third.

(Seal.) WOODROW WILSON.

By the President:
ROBERT LANSING,
*Secretary of State.*

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**PLAINTIFF'S EXHIBIT No. 729-E.**

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CERTAIN INDIVIDUALS, AND BODIES AND CLASSES OF INDIVIDUALS INCLUDED WITHIN THE TERM "ENEMY" FOR THE PURPOSES OF THE TRADING WITH THE ENEMY ACT.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1477.]

Whereas, section 2 of the Act of Congress entitled, "An Act To define, regulate, and punish trading with the enemy, and for other purposes," approved October 6, 1917, known as the "Trading with the enemy Act," provides that the word "enemy" as used therein

shall be deemed to mean for the purposes of such trading and of said Act:

"Such other individuals, or body or class of individuals, as may be natives, citizens, or subjects of any nation with which the United States is at war, other than citizens of the United States, wherever resident or wherever doing business, as the President, if he shall find the safety of the United States or the successful prosecution of the war shall so require, may, by proclamation, include within the term 'enemy';"

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the authority vested in me by said Act, and in accordance with the provisions thereof, do find hereby that the following named individuals, and bodies and classes of individuals, are natives, citizens, or subjects of a nation with which the United States is at war, and that the safety of the United States and the successful prosecution of the war require that said individuals, and bodies and classes of individuals, be included within the term "enemy," as used in said Act; and therefore I do include hereby within said term "enemy" as used in said Act, the following individuals, and bodies and classes of individuals, to wit:

(1) Wilhelm Forstner, heretofore one of the members of the partnership of F. Speidel Company, heretofore doing business in Providence, Rhode Island, and elsewhere;

(2) Karl Bunz, heretofore one of the officials of the Hamburg-American Line, and now in the Federal penitentiary at Atlanta, Georgia.

In witness whereof, I have hereunto set my hand and caused the Seal of the United States to be affixed.

Done in the District of Columbia, this 14th day of August, in the year of our Lord one thousand nine

hundred and eighteen, and of the independence of the United States the one hundred and forty-third.

(Seal.) WOODROW WILSON.

By the President:
ROBERT LANSING,
*Secretary of State.*

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## PLAINTIFF'S EXHIBIT No. 729-F.

CERTAIN INDIVIDUALS, AND BODIES AND CLASSES OF INDIVIDUALS INCLUDED WITHIN THE TERM "ENEMY" FOR THE PURPOSE OF THE TRADING WITH THE ENEMY ACT.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

[No. 1503.]

Whereas, Section 2 of the Act of Congress entitled, "An Act to define, regulate, and punish trading with the enemy, and for other purposes" approved October 6, 1917, known as the "Trading with the enemy Act," provides that the word "enemy" as used therein shall be deemed to mean for the purposes of such trading and of said Act:

"Such other individuals, or body or class of individuals, as may be natives, citizens, or subjects of any nation with which the United States is at war, other than citizens of the United States, wherever resident or wherever doing business, as the President, if he shall find the safety of the United States or the successful prosecution of the war shall so require, may, by proclamation, include within the term 'enemy';"

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the author-

ity vested in me by said Act, and in accordance with the provisions thereof, do find hereby that the following named individuals, and bodies and classes of individuals, are natives, citizens, or subjects of a nation with which the United States is at war, and that the safety of the United States and the successful prosecution of the war require that said individuals, and bodies and classes of individuals, be included within the term "enemy," as used in said Act; and therefore I do include hereby within said term "enemy" as used in said Act, the following individuals and bodies and classes of individuals, to wit:

(1) Lina Haberland, of Meerane, Saxony, Germany.
(2) Wm. Schmeider, of Meerane, Saxony, Germany.
(3) Moritz Jacoby, of Berlin, Germany.
(4) Edward Lehwess, of Berlin, Germany.
(5) Kurt Schmeider, of Meerane, Saxony, Germany.
(6) Lisette Zippel, of Germany.
(7) Carl Schmeider, of Meerane, Saxony, Germany.
(8) Paul Haberland, Officer in German Army.

The said individuals numbered (1) to (8) both inclusive, being the owners and/or holders of certain shares of the capital stock of Garfield Worsted Mills, a corporation, of Garfield, New Jersey.

(9) E. Ruckdeschel, Sr., of Gera, Germany.
(10) Gustav Weissflog, of Gera, Germany.
(11) Ernest F. Weissflog, of Gera, Germany.

The aforesaid individuals numbered (9) to (11) both inclusive, being the owners, and/or holders of certain shares of the capital stock of Gera Mills, a corporation, of Passaic, New Jersey.

(12) Ernst Fr. Weissflog, of Gera, Germany.
(13) Paul Leibinger, of Ulm, Germany.
(14) Marie Ruckdeschel, of Gera, Germany.
(15) A. Von Wencher, of Trier, Germany.
(16) Gustav Weissflog, of Gera, Germany.
(17) Ernst Hupfer, of Bockwa, Germany.
(18) E. Ruckdeschel, Sr., of Gera, Germany.
(19) E. Ruckdeschel, Jr., of Gera, Germany.
(20) Otto Magirus, of Ulm, Germany.
(21) A. V. Magirus, of Stuttgart, Germany.
(22) Rudolph Meier, of Gera, Germany.
(23) Ernst Meier, of Gera, Germany.
(24) Fritz Zschocke, of Chemnitz, Germany.

The aforesaid individuals numbered (12) to (24), both inclusive, being the owners and/or holders of certain shares of the capital stock of Passaic Worsted Spinning Company, a corporation of Passaic, New Jersey.

(25) Otto T. Schuller, of Dusseldorf, Germany.
(26) Edward Dressler, of Gotha, Germany.
(27) Gustav Leye, of Naumburg, a/d Salle, Germany.
(28) Kurt Heitzig, of Zwickau, Saxony, Germany.
(29) Hugo Albert, of Pfaffengrün, Treuen, Germany.
(30) Guido Dietel, of Wilkau, Saxony, Germany.
(31) Estate Richard Hiller, Zwickau, Saxony, Germany.
(32) Johannes Heitzig, Chemnitz, Saxony, Germany.
(33) Alfred Resch, of Karlsruhe, Germany.
(34) Emma Kleinjung, of Wilkau, Saxony, Germany.
(35) Laura Kleinjung, of Wilkau, Saxony, Germany.

(36) Ernst Fr. Weissflog, of Gera, Reuss, Germany.
(37) Martha Vogler, of Frankfort a/M Germany.
(38) Hugo Neithold, of Dresden, Germany.
(39) Liddy Leonhardt, of Crossen, a/d Mulde, Germany.
(40) Emil Kleinjung, of Wilkau, Saxony, Germany.
(41) Clara Ramminger, of Gera, Reuss, Germany.
(42) Estate Chas. Meyer, of Hanover, Germany.
(43) Estate Ernst Meyer, of Gera, Reuss, Germany.
(44) Marie Ruckdeschel, of Gera, Reuss, Germany.
(45) Louise Bauer, of Gera, Reuss, Germany.
(46) Gustav Weissflog, of Gera, Reuss, Germany.
(47) Alwine Dietel, of Wilkau, Saxony, Germany.
(48) Herbert Dietel, of Wilkau, Saxony, Germany.
(49) Eugen Ruckdeschel, of Gera, Reuss, Germany.
(50) George Hirsch, of Gera, Unternhaus, Germany.
(51) Rudolph Meyer, of Gera, Reuss, Germany.

The aforesaid individuals and classes or bodies of individuals numbered (25) to (51), both inclusive, being the owners and/or holders of certain shares of the capital stock of New Jersey Worsted Spinning Company, a corporation of Garfield, New Jersey.

(52) Friedrich Arnold, of Greiz, Germany.
(53) F. Arnold, of Greiz, Germany.
(54) C. Wolfrum, of Aussig, Austria.
(55) George Stoehr, of Leipzig, Germany.
(56) Hermann Arnold, of Greiz, Germany.
(57) S. Bleichroder, of Berlin, Germany.

(58) Paul Arnold, of Greiz, Germany.
(59) Eduard Stoehr, of Leipzig, Germany.
(60) Frieda Pauline von Keil, of Dresden, Germany.
(61) G. Weissflog, of Gera, Germany.
(62) Georg Hirsch, of Gera, Germany.
(63) Kammgarn Spinnerei Stoehr & Co., of Leipzig, Germany.
(64) George Thieme, of Leipzig, Germany.
(65) Hedwig Harseim, of Hamburg, Germany.
(66) Martha Hempel, of Lubeck, Germany.
(67) Allgemeine Deutsche Credit Anstalt, of Leipzig, Germany.
(68) Eugenie Krause, of Frankfurt, Germany.
(69) Deutsche Bank, of Leipzig, Germany.
(70) Ludwig Kick, of Lindau, Germany.
(71) Kati Thielman, of Scharfenberg, Post Gruben, Schlesien.
(72) Dr. Alfred Ackermann, of Leipzig, Germany.
(73) Marie Ackermann, of Leipzig, Germany.
(74) Max Beck, of Leipzig, Germany.
(75) Carl Beckman, Leipzig, Germany.
(76) Robert Blank, of Elberfeld, Germany.
(77) Leonie Doflein, of Freiburg, Germany.
(78) Victor Dubois, of Leipzig, Plagwitz, Germany.
(79) Ludwig Durbig, of Munich, Germany.
(80) Paul Eichenberg, of Gera, Reuss, Germany.
(81) G. Erben Franz, of Greiz, Germany.
(82) Wilhelm Friess, of Leipzig, Germany.
(83) Arno Gimm, of Leipzig, Germany.
(84) Marie Therese Gertrud Grosch, of Bautzen, Germany.
(85) Albert Gunnel, of Leipzig, Germany.
(86) Dr. Ernest C. Hartwig, of Gemunden, Germany.
(87) Gustav Harz, of Leipzig, Germany.

(88) Helene Hecker, of Leipzig, Germany.
(89) Carl Heyligenstaedt, of Leipzig, Germany.
(90) Elise Hass, of Greiz, Germany.
(91) Dera Meta Antoinie Hass, of Greiz, Germany.
(92) Emma Huth, of Leipzig, Germany.
(93) Otto Jager, of Gera, Reuss, Germany.
(94) Elisabeth Murschner, of Greiz, Germany.
(95) Dr. Kurt Kuntze, of Leipzig, Germany.
(96) Chas. de Liagre, of Leipzig, Germany.
(97) R. Liebeck, of Leipzig, Germany.
(98) R. Liebetrau, of Leipzig, Germany.
(99) Martina von Hoffman Limburger, of Leipzig, Germany.
(100) Dr. W. Limburger, of Leipzig, Germany.
(101) Hildegard Elizabeth Lohmann, of Dresden, Germany.
(102) Emil Muller, of Meerane, Germany.
(103) O. Moench, of Leipzig, Germany.
(104) Alice Moslinger, of Mannheim, Germany.
(105) Meyer & Company, of Leipzig, Germany.
(106) Emma Meinhardi, of Leer Ostfriesland, Germany.
(107) Friedr. Pfitzmann, of Loschwitz, Germany.
(108) Elizabeth Pfitzmann, of Loschwitz, Germany.
(109) Franz Edgar von Penzig, of Voslau, Austria.
(110) Julie Paulssen, of Leipzig, Germany.
(111) M. Pilgram, of Zehlendorf, Wannseebahn, Germany.
(112) Bertha Rossle, of Munich, Germany.
(113) Dr. R. Rossle, of Jena, Germany.
(114) G. Stadrat Ramdohr, of Leipzig, Germany.
(115) Jos. Rudolph, of Gera, Reuss, Germany.
(116) Martha Elizabeth Roeder, of Charlottenberg, Germany.
(117) Ella Stoehr, Leipzig, Germany.

(118) Kathe Stoehr, of Eisen Bach, Germany.
(119) Paul Stoehr, of Weimar, Germany.
(120) Carl Sieglitz, of Gera, Reuss, Germany.
(121) R. Schumann, of Steglitz, Berlin, Germany.
(122) Bruno Schulze, of Leipzig, Germany.
(123) Celestine Stroh, of Frankfurt a/M Germany.
(124) Anna Thieme, of Leipzig, Germany.
(125) Dr. Ulrich Thieme, of Leipzig, Germany.
(126) Baldwin Teichmann, of Dresden, Germany.
(127) Dr. Karl Uhlmann, Radebeul, Germany.
(128) Waldtraut Dora Uhlmann, of Radebeul, Germany.
(129) Gustav Ulrich, of Munich, Germany.
(130) Gabriele Wecker, of Munich, Germany.
(131) C. H. Wolfrum, of Aussig, Austria.
(132) E. B. Young, of Gera, Reuss, Germany.
(133) Walter Zenther, of Leipzig, Germany.
(134) Mrs. Cecelia Julie Ossenbeul, of Furstenwall 99, Dusseldorf, Germany.

The aforesaid individuals and classes or bodies of individuals, numbered 52 to 134, both inclusive, being the owners and/or holders of certain shares of the capital stock of Botany Worsted Mills, a corporation under the laws of the State of New Jersey, with its principal office at Passaic, New Jersey.

(135) George Marwitz, of Dresden, Germany;
(136) Dresdener Gardinen und Spitzen Manufactur Actien Gesellschaft, of Dresden, Germany;

The aforesaid individuals, and classes or bodies of individuals, numbered 135 to 136, being the owners and/or holders of certain shares of the capital stock of Dresden Lace Works, Inc., a corporation under the laws of the State of New York, with its principal office at 30 East 21st Street, New York, N. Y.

(137) Rudolph Plochman, of Frankfort, Germany;
(138) Bronze Farbenwerke Aktien Gesellschaft, of Barnsdorf, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 137 and 138, being the owners and/or holders of certain shares of the capital stock of Bronze Powder Works Company, formerly Carl Schlenk, a corporation under the laws of the State of New Jersey, with its principal office at 801 Magnolia Avenue, Elizabeth, New Jersey.

(139) Otto Falck, of Dresden, Germany;
(140) Richard Clauss, of Emleben, Germany;
(141) Ingeborg Stollwerck, of Cologne, Germany;
(142) Gebrueder Stollwerck, A. G., Cologne, Germany.

The aforesaid individuals and classes or bodies of individuals numbered 139 to 142, both inclusive, being the owners and/or holders of certain shares of the capital stock of Stollwerck Brothers, Inc., a corporation under the laws of the State of Connecticut, with its principal office at Stamford, Connecticut.

(143) W. Wolf & Sons, of Stuttgart, Germany.

The aforesaid individuals and classes or bodies of individuals, numbered 143, being the owners and/or holders of certain shares of the capital stock of New England Waste Company, American Linters Company, American Products Company, Overseas Trading Company, corporations under the laws of the State of Massachusetts, with their principal office in Boston, and of W. Wolf & Sons, a corporation under the laws of the State of Massachusetts, with its principal office in Boston, Mass.

(144) Mrs. Jennie Seeger, of Frankfurt, Germany;

(169) The heirs personal representatives and distributees of the Estate of Hirsh W. Fuchs, of Leipzig, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 169, being the owners and/or holders of certain shares of the capital stock of Fuchs & Company, a corporation under the laws of the State of New York, with its principal office at 144 West 27th Street, New York, N. Y.

(170) Leo Wreschner, of Frankfurt on the Main, Germany;

(171) Nathan Sondheimer, of Frankfurt on the Main, Germany;

(172) Albert Sondheimer, of Frankfurt on the Main, Germany;

(173) Ludwig Beers, of Frankfurt on the Main, Germany;

(174) Emil Beers, of Frankfurt on the Main, Germany;

(175) Beer-Sondheimer & Company, of Frankfurt on the Main, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 170 to 175, both inclusive, being the owners and/or holders of certain shares of the capital stock of Beer-Sondheimer & Company, Incorporated, a corporation under the laws of the State of New York, with its principal office at 61 Broadway, New York, N. Y.

(176) Bernhard Thurmauer, of Nuremburg, Germany;

The aforesaid individual, numbered 176, being the owner and/or holder of certain shares of the capital stock of American Lava Company, a corporation under

the laws of the State of Tennessee, with its principal office at Chattanooga, Tenn.

(177) Carl Leverkus, Sr., of Cologne, Germany;

The aforesaid individual, numbered 177, being the owner and/or holder of certain shares of the capital stock of International Ultramarine Works, Limited, a corporation under the laws of the State of New Jersey, with its principal office at 113-115 Leonard Street, New York, N. Y.

(178) Lucia Senger, of Germany;
(179) Dr. Emil Majert, of Germany;
(180) Ottilie Krimler, of Germany
as executors of the will of
(181) W. Majert, deceased;

The aforesaid individuals and classes or bodies of individuals, numbered 178 to 181, both inclusive, being the owners and/or holders of certain shares of the capital stock of Emil Majert Company, a corporation under the laws of the State of New York, with its principal office at 9-11 East 37th Street, New York, N. Y.

(182) Moritz Neuberger, of Germany;

The aforesaid individual, numbered 182, being the owner and/or holder of certain shares of the capital stock of H. Neuberger Company, Incorporated, a corporation under the laws of the State of New York, with its principal office at 130 Water Street, New York, N. Y.

(183) Gebrueder Roechling, Ludwigshafen, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 183, being the owners and/or

holders of certain shares of the capital stock of Roechling Electro-Steel Company, a corporation under the laws of the State of New York, with its principal office at 175 LaFayette Street, New York, N. Y.

(184) Adolf Messer, of Rebstoecker Strasse 57, Frankfurt a. Main, Germany;

The aforesaid individual, numbered 184, being the owner and/or holder of certain shares of the capital stock of Messer Manufacturing Company, a corporation under the laws of the State of Pennsylvania, with its principal office at 121 North 7th Street, Philadelphia, Pa.

(185) Hans Bredow, of Berlin, Germany;
(186) Gesellschaft fur Drahtlose Telegraphie m. b. H., of Berlin, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 185 and 186, being the owners and/or holders of certain shares of the capital stock of Atlantic Communication Company, a corporation under the laws of the State of New York, having its principal office at 47 West Street, New York, N. Y.

(187) George Hirsch, of Gera Russ, Germany;
(188) Ignatz Petschek, of Austria;

The aforesaid individuals, numbered 187 and 188, being the owners and/or holders of certain shares of the capital stock of Elly Coal Company, a corporation under the laws of the State of Illinois, with its principal office at Girard, Ill.

(189) Emanuel Mann, of Pforzheim, Germany;
(190) John A. Herr, of Pforzheim, Germany;
(191) John A. Heer, of Pforzheim, Germany;
(192) E. G. Bek, of Pforzheim, Germany;

The aforesaid individuals, numbered 189 to 192, both inclusive, being the owners and/or holders of certain shares of the capital stock of Ernst Gideon Bek Manufacturing Company, a corporation under the laws of the State of New Jersey, with its principal office at 77 Austin Street, Newark, N. J.

(193) Ernst Gideon Bek, of Pforzheim, Germany;

The aforesaid individual, numbered 193, being the owner and/or holder of certain shares of the capital stock of Ernst Gideon Bek, Incorporated, corporation under the laws of the State of New York, with its principal office at 15 Maiden Lane, New York, N. Y.

(194) Stettiner Chamotte Fabrik Aktien Gesellschaft, of Stetting, Germany;

The aforesaid class or body of individuals, numbered 194, being the owners and/or holders of certain shares of the capital stock of Didier-March Company, a corporation under the laws of the State of New Jersey, with its principal office at 15 Exchange Place, Jersey City, N. J.

(195) Charles Duisberg, of Leverkusen, Germany;
(196) Christian Hess, of Leverkusen, Germany;
(197) Rudolph Mann, of Leverkusen, Germany;

The aforesaid individuals, being numbered 195 to 197, both inclusive, and being the owners and/or holders of certain shares of the capital stock of the Synthetic Patent Company, a corporation under the laws of the State of New York, with its principal office at 117 Hudson Street, New York, N. Y., and of certain shares of the capital stock of The Bayer Company, Incorporated, a corporation under the laws of

the State of New York, with its principal office at 117 Hudson Street, New York, N. Y.

(198) Bauer & Cie., of Berlin, Germany;

The aforesaid class or body of individuals, numbered 198, being the owners and/or holder of certain shares of the capital stock of The Bauer Chemical Company, a corporation under the laws of the State of New York, and having its principal office at 30 Irving Place, New York, N. Y.

(199) Curt & Walter Oelssner, of Leipzig, Germany;

(200) Gerhard & Hey, of Leipzig, Germany;

The aforesaid individuals and class of or body of individuals, being numbers 199 and 200, and being the owners and/or holders of certain shares of the capital stock of Gerhard & Hey, Incorporated, a copartnership, of Leipzig, Germany, with an office at 21-29 State Street, New York, N. Y.

(201) Adolf Richter, of Rudolstadt, Germany;

(202) Dr. Oskar Richter, of Vienna, Austria;

(203) Dr. Kurt Richter, of Rudolstadt, Germany;

(204) Dr. Walter Richter, of Rudolstadt, Germany;

(205) Dr. Johanna Richter, of Berlin, Germany;

(206) Mrs. Clara Zoeth, of Nurenburg, Germany;

(207) Mrs. Elsa Kempe, of Nurenburg, Germany;

(208) Mrs. Lina Balzer, of Rudolstadt, Germany;

The aforesaid individuals, numbered 201 to 208, both inclusive, being the owners and/or holders of certain shares of the capital stock of F. AD. Richter & Company, a corporation under the laws of the State of New York, with its principal office at 74 Washington Street, New York, N. Y.

(209) Willy Stark, of Marknenkirchen, Germany;
(210) Bruno Stark, of Marknenkirchen, Germany;
(211) Hans Hohner, formerly of 170 West 73rd Street, New York, N. Y., and now in Germany;

The aforesaid individuals, numbered 209 to 211, both inclusive, being the owners and/or holders of certain shares of the capital stock of C. Bruno & Son, Incorporated, a corporation under the laws of the State of New York, with its principal office at 351 Fourth Avenue, New York, N. Y.

(212) Ernst Koerting, of Hanover, Germany;

The aforesaid individual, numbered 212, being the owner and/or holder of certain shares of the capital stock of Schutte and Koerting, a corporation under the laws of the State of Pennsylvania, with its principal office at 12th and Thompson Streets, Philadelphia, Pa.

(213) A. W. Faber, Stein, Germany;

The aforesaid individual, numbered 213, being the owner and/or holder of certain shares of the capital stock of A. W. Faber, a copartnership, composed of Alexander Count von Faber and/or Ottilie Countess von Faber-Castell, Stein, Germany; U. S. address, Newark, N. J.;

(214) Adolph Neubauer, Nurnberg, Germany;
(215) Eugene Kirschbaum, Nurnberg, Germany;
(216) Adolph Neubauer and Eugene Kirschbaum, Nurnberg, Germany;

The aforesaid individuals and bodies of individuals, numbered 214 to 216, both inclusive, being the owners and/or holders of certain shares of the capital stock of George Benda, a copartnership, composed

of Adolph Neubauer and Eugene Kirschbaum, Nurnberg, Germany, U. S. address, 112 East 19th Street, New York, and Boonton, N. J.

(217) H. Otto Traun, of Hamburg, Germany;

The aforesaid individual, numbered 217, being the owner and/or holder of certain shares of the capital stock of Traun Rubber Company, a corporation under the laws of the State of New Jersey, with its principal office at 239 Fourth Avenue, New York, N. Y.

(218) Robert Bosch, of Stuttgart, Germany;
(219) The heirs, legatees, devisees and distributees of the Estate of Gustav Klein;

The aforesaid individuals and classes or bodies of individuals, numbered 218 and 219, being the owners and/or holders of certain shares of the capital stock of Bosch Magneto Company, a corporation under the laws of the State of New York, with its principal office at 225 West 46th Street, New York, N. Y.

(220) H. C. Meyer, Jr., Kommandit-Gesellschaft auf Aktien, of Hamburg, Germany;

The aforesaid individual and classes or bodies of individuals, being numbered 220, the owners and/or holders of certain shares of the capital stock of Rattan and Cane Company, a corporation under the laws of the State of New York, with its principal office at 66 West Broadway, New York, N. Y.

(221) Robert Otto, of Berlin, Germany;
(222) Max Anger, of Berlin, Germany;
(223) Werner Otto, of Berlin, Germany;

The aforesaid individuals, numbered 221 to 223, both inclusive, being the owners and/or holders of cer-

tain shares of the capital stock of The Sanax Company, Incorporated, a corporation under the laws of the State of New York, with its principal office at 125 East 23rd Street, New York, N. Y.

(224) Alb. & E. Henkels, of Langerfeld, Westphalia, Germany;

The aforesaid individuals and classes or bodies of individuals numbered 224, being the owners and/or holders of certain shares of the capital stock of International Textile, Incorporated, a corporation under the laws of the State of Connecticut, with its principal office at Bridgeport, Conn.

(225) Wurttembergische Vereinbank, of Stuttgart, Germany;

The aforesaid classes or bodies of individuals, numbered 225, being the owners and/or holders of certain shares of the capital stock of Kny-Scheerer Corporation, incorporated under the laws of the State of New York, with its principal office at 404 West 27th Street, New York, N. Y.

(226) Chemische Fabrik von Heyden, of Radebeul, Germany;

(227) R. Vorlaender, of Radebeul, near Dresden, Germany;

(228) A. von Heyden, of Radebeul, near Dresden, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 226 to 228, both inclusive, being owners and/or holders of certain shares of the capital stock of Heyden Chemical Works, a corporation under the laws of the State of New Jersey, with its principal office at 135 William Street, New York, N. Y.

(229) Richard Franck, of Ludwigsburg, Germany;

(230) Carl, Robert, Richard and Walter Franck, of Ludwigsburg, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 229 and 230, being owners and/or holders of certain shares of the capital stock of Heinr Franck, Sons, Inc., a corporation under the laws of the State of New York, with its principal office at Flushing, New York.

(231) Federico Stallforth (interned at Fort Oglethorpe, Ga.)

The aforesaid individual, numbered 231, being the owner and/or holder of certain shares of the capital stock of Stallforth & Company, Inc., a corporation under the laws of the State of New York, with its principal office at 120 Broadway, New York, N. Y.

(232) Kast & Ehinger, G. m. b. H., of Stuttgart, Germany;

(233) Dr. Charles A. Stickel, of Cannstatt-Stuttgart, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 232 and 233, being the owners and/or holders of certain shares of the capital stock of Charles Hellmuth, a corporation under the laws of the State of New York, with its principal office at 154 West 18th Street, New York.

(234) H. Rost & Company, of Hamburg, Germany;

(235) Dr. F. Lampert, of Hamburg, Germany;

(236) Mrs. Anna L. Lampert, of Hamburg, Germany;

(237) Mrs. Caroline Soltau, of Hamburg, Germany;

(238) Mrs. Olga J. C. Schrumpf, of Hamburg, Germany, individually and as members of the firm of Robert Soltau and Company, and the firm of F. Lampert Company;

The aforesaid individuals and classes or bodies of individuals, numbered 234 to 238, both inclusive, being the owners and/or holders of certain shares of the capital stock of Robert Soltau & Company, Inc., a corporation under the laws of the State of New York, with its principal office at 148 West 23rd Street, New York, N. Y.

(239) The Portland-Cement Fabrik Hemmoor, of Hamburg, Germany;
(240) Carl Jacobi, of Hamburg, Germany;
(241) Estate Carl Prussing, deceased, Hamburg, Germany;
(242) Dr. Otto Strebel, of Hemmoor, Germany;
(243) Estate H. A. Borcholte, deceased, Stade, Germany;
(244) Dr. W. Kiesselbach, of Hamburg, Germany;
(245) Ferb. Bruns, Estate;
(246) L. Kessal, of Hamburg, Germany;
(247) H. in der Stroth, Bentheim;
(248) Henning Franzen, of Hamburg, Germany;
(249) A. Steinmetz, of Hamburg, Germany;
(250) Dr. Luedemann, of Hamburg, Germany;
(251) Mrs. I. C. C. Moellendorf, of Hamburg, Germany;
(252) Otto Wilkers, of Hamburg, Germany;
(253) Herman Bartels, of Hanover, Germany;
(254) Dr. Otto Strebel, of Hamburg, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 239 to 254, both inclusive, being the owners and/or holders of certain shares of

the capital stock of German American Portland Cement Works (now La Salle Portland Cement Company), a corporation under the laws of the State of Illinois, with its principal office at 140 South Dearborn Street, Chicago, Ill.

(255) Treibacher Chemische Werke, of Treibach, Austria;

The aforesaid individuals and classes or bodies of individuals, numbered 255, being the owners and/or holders of certain shares of the capital stock of American Pyrophor Company, a corporation under the laws of the State of New York, with its principal office at 317 East 34th Street, New York, N. Y.

(256) Richard Werner, of Cannstatt, Germany;
(257) Otto Werner, of Cannstatt, Germany;
(258) Gottlob Scholl, of Cannstatt, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 256 to 258, both inclusive, being the owners and/or holders of certain shares of the capital stock of Werner & Pfleiderer Company, a corporation under the laws of the State of Michigan, with its principal office at 1204 Niagara Street, Saginaw, Michigan.

(259) Carl Merck,
(260) George Merck,
(261) Wilhelm Merck, individually and trading as
(262) E. Merck, Darmstadt, Germany,

The aforesaid individuals and classes or bodies of individuals, numbered 259 to 262, both inclusive, being the owners and/or holders of certain shares of the capital stock of Merck & Company, a corporation under the laws of the State of New York, and having its principal office at 45 Park Place, New York, N. Y.

(263) Marc Fuchs F. Riedel, Berlin, Germany;
(264) Estate Fritz Riedel, Berlin, Germany;
(265) Estate Ludwig Friedrich Riedel, Berlin, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 263 to 265, both inclusive, being owners and/or holders of certain shares of the capital stock of Riedel & Company, Incorporated, a corporation under the laws of the State of New York, with its principal office at 35 West 32nd Street, New York, N. Y.

(266) Otto Rohm, of Darmstadt, Germany;

The aforesaid individual, numbered 266, being the owner and/or holder of certain shares of the capital stock of Rhom & Hass Company, a corporation under the laws of the State of Pennsylvania, with its principal office at 40 North Front Street, Philadelphia, Pa.

(267) Robert Bosch and associates, of Stuttgart, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 267, being owners and/or holders of certain shares of the capital stock of Boonton Rubber Manufacturing Company, a corporation under the laws of the State of New Jersey, with its principal office at Boonton, New Jersey, and of the capital stock of Eisemann Magneto Company, a corporation of the State of New York, with its principal office at 32 Bush Terminal Building, Brooklyn, N. Y.

(268) E. Eisemann Company, of Stuttgart, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 268, being the owners and/or holders of certain shares of the capital stock of Eise-

mann Magneto Company, a corporation of the State of New York, with its principal office at 32 Bush Terminal Building, Brooklyn, N. Y.

(269) R. Bernheim, of Augsburg, Germany;
(270) I. Bernheim, of Augsburg, Germany;
(271) Adolph Bernheim, of Augsburg, Germany;
(272) Seigfried Bernheim, of Augsburg, Germany.
(273) Rudolf Nathan, of Augsburg, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 269 to 273, both inclusive, being the owners and/or holders of certain shares of the capital stock of The New Brunswick Chemical Company, a corporation under the laws of the State of New Jersey, with its principal office at Allen Avenue, New Brunswick, New Jersey.

(274) Furstlich Schaumburg Lippische Hofkammer, of Bucksburg, Germany;
(275) Fr. Julius Schreyer, of Bremen, Germany.
(276) C. G. Hartwig, of Bremen, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 274 to 276, both inclusive, being the owners and/or holders of certain shares of the capital stock of German-American Lumber Company, a corporation under the laws of the State of Florida, with its principal office at Pensacola, Florida.

(277) Paul Schabert, address unknown;
(278) Emma von Plootz, address unknown;

The aforesaid individuals, numbered 277 and 278, being the owners and/or holders of certain shares of the capital stock of The Huntington Piano Company, a corporation under the laws of the State of Connecticut, with its principal office at Shelton, Conn., and

The Sterling Company, and The Blake Corporation, both incorporated under the laws of the State of Connecticut, with their principal offices at Derby, Conn.

(279) Louise Löew, of 2 Rochusgasse, Vienna, Austria;

The aforesaid individual, numbered 279, being the owner and/or holder of certain shares of the capital stock of John Rath Cooperage Company, a corporation under the laws of the State of Illinois, with its principal office at North Kilpatrick and West North Avenues, Chicago, Ill.

(280) H. von Thiele Winkler, of Taubenstrasse 46, Berlin, Germany;
(281) Ferdinand von Grumme, of Mittelweg 84, Hamburg, Germany;
(282) Angus von Douglas, of Taubenstrasse 46, Berlin, Germany;
(283) Eberhardt von Bodenhausen, of Brede, near Essen, Germany;
(284) Dittmar Finkler, of Bonn, Germany;
(285) Herman Dinklage, of Mulheim-on-Rhine, Germany;
(286) Christian Finkler, of Mulheim-on-Rhine, Germany;
(287) Estate of Count Douglas, Zimbenstrasse 46, Berlin, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 280 to 287, both inclusive, being the owners and/or holders of certain shares of the capital stock of Tropon Works, a corporation under the laws of the State of New York, with its principal office at 81 Fulton Street, New York, N. Y.

(288) Kaffee Patent Aktiengesellschaft, of Bremen, Germany;

The aforesaid class or body of individuals, numbered 288, being the owners and/or holders of certain shares of the capital stock of Kaffee Hag Corporation, incorporated under the laws of the State of New York, and having its principal office at 225 Fifth Avenue, New York, N. Y.

(289) Rudolph Chillingworth, of Nurnburg, Germany;

The aforesaid individual, numbered 289, being the owner and/or holder of certain shares of the capital stock of the Chillingworth Manufacturing Company, a corporation under the laws of the State of New Jersey, with its principal office at Carbon Place, Jersey City, N. J.

(290) Gustav Reis, of Furth, Bavaria, Germany;

The aforesaid individual, numbered 290, being the owner and/or holder of certain shares of the capital stock of G. Reis & Brothers, Incorporated, a corporation under the laws of the State of New York, with its principal office at 894-900 Broadway, New York, N. Y.

(291) Richard G. Blumenthal (Interned);
(292) Richard Heyder (Interned);

The aforesaid individuals, numbered 291 and 292, being the owners and/or holders of certain shares of the capital stock of Williamsburg Chemical Company, a corporation under the laws of the State of New York, with its principal office at 230 Morgan Avenue, Brooklyn, N. Y.

(293) Emma Crone, of Duisberg, Germany;
(294) Estate Anna Erbsloh, Deceased; Barmen, Germany;
(295) Millie Raffloer, Berlin, Germany;

The aforesaid individuals, and classes or bodies of individuals, numbered 293 to 295, both inclusive, being the owners and/or holders of certain shares of the capital stock of American Storage Company, a corporation under the laws of the State of New Jersey, with its principal office at 560 Broadway, New York, N. Y.

(296) Paul Mecke, of Unna, Germany;
(297) Leop. Heppe, of Unna, Germany;
(298) Estate of Von der Heide, of Unna, Germany;
(299) Wunnersche Bitumen, of Unna, Germany;

The aforesaid individuals, and classes or bodies of individuals, numbered 296 to 299, both inclusive, being the owners and/or holders of certain shares of the capital stock of Ceresit Waterproofing Company, a corporation under the laws of the State of Illinois with its principal office at 110 South Dearborn Street, Chicago, Ill.

(300) Friemann and Wolf, of Zwickau, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 300, being the owners and/or holders of certain shares of the capital stock of Wolf Safety Lamp Company of America, Inc., a corporation under the laws of the State of New York, with its principal office at 74-80 West Street, New York, N. Y.

(301) Fritz Dresel, of Magdeburg, Germany;
(302) Otto Arnold, of Magdeburg, Germany;

The aforesaid individuals, numbered 301 and 302, being the owners and/or holders of certain shares of the capital stock of The Schaeffer & Budenberg Manufacturing Company, a corporation under the laws of

the State of New York, with its principal office at 338 Berry Street, New York, N. Y.

(303) E. Lutz (interned at Pensacola, Florida);

The aforesaid individual, numbered 303, being the owner and/or holder of certain shares of the capital stock of Lutz-Shipping Company of Pensacola, Florida, a corporation under the laws of the State of Florida, with its principal office at Pensacola, Florida.

(304) E. Dankelmann, of Dresden, Germany;
(305) Selas A. G., Berlin, Germany;
(305) Estate Leon Dankelmann, Berlin, Germany;
(306) George A. Schleber, of Griez, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 304 to 306, both inclusive, being the owners and/or holders of certain shares of the capital stock of The Selas Company, incorporated under the laws of the State of New York, and with its principal office at 521-525 West 23rd Street, New York, N. Y.

(307) Isaac Straus (Interned at Fort Oglethorpe, Ga.)

The aforesaid individual, numbered 307, being the owner and/or holder of certain shares of the capital stock of the Chromos Chemical Company, Inc., a corporation under the laws of the State of New York, with its principal office at Aeolian Hall, New York, N. Y.

(308) Friedrich Goetze, of Bruscheid, Germany;

The aforesaid individual, numbered 308, being the owner and/or holder of certain shares of the capital stock of The Goetze Gasket & Packing Company, a corporation under the laws of the State of New Jer-

sey, with its principal office at Allen Avenue, New Brunswick, N. J.

(309) Norma Company G. m. b. H., of Cannstadt, Germany;

The aforesaid individuals and class or body of individuals, numbered 309, being the owners and/or holders of certain shares of the capital stock of The Norma Company of America, a corporation under the laws of the State of New York, with its principal office at 1790 Broadway, New York, N. Y.

(310) Julius Goldschmidt, of Hamburg, Germany;

The aforesaid individual, numbered 310, being the owner and/or holder of certain shares of the capital stock of the R & G Corset Company, Inc., a corporation under the laws of the State of New York, with its principal office at 880 Broadway, New York, N. Y.

(311) Deutsche Bank, Berlin, Germany;
(312) H. Tauscher, Friedenau, Berlin, Germany;
(313) Kom, Paul Goerz, Berlin, Germany,

The aforesaid individuals and classes or bodies of individuals, numbered 311 to 313, both inclusive, being the owners and/or holders of certain shares of the capital stock of C. P. Goerz American Optical Company, a corporation under the laws of the State of New York, with its principal office at 317 East 34th Street, New York, N. Y.

(314) Alsen'sche Portland Cement Fabriken, of Hamburg, Germany;
(315) W. Muller, of Hamburg, Germany;
(316) Lucien Alsen, of Hamburg, Germany;
(317) Estate of H. Wessel, of Hamburg, Germany;

(318) H. Wulf, of Altona, Germany;
(319) W. Willms, of Hamburg, Germany;

The aforesaid individuals, and classes or bodies of individuals, numbered 314 to 319, both inclusive, being the owners and/or holders of certain shares of the capital stock of Alsen's American Portland Cement Works, a corporation under the laws of the State of New York, with its principal office at 277 Broadway, New York, N. Y.

(320) Ludwig Pustet, of Regensburg, Germany;

The aforesaid individual, numbered 320, being the owner and/or holder of certain shares of the capital stock of Tapke Realty Company, a corporation under the laws of the State of New York, with its principal office at 52 Barclay Street, New York, N. Y.

(321) Hamburg Assurance Company, of Hamburg, Germany;
(322) Franz F. Mutzenbecher, of Hamburg, Germany;
(323) Hermann Mutzenbecher, of Hamburg, Germany;
(324) Ernest Behre, of Berlin, Germany;

The aforesaid individuals and classes or bodies of individuals, numbered 321 to 324, both inclusive, being the owners and/or holders of certain shares of the capital stock of the International Insurance Company, a corporation under the laws of the State of New York, with its principal office at 80 Maiden Lane, New York, N. Y.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia, this 29th day of November, in the year of our Lord one thousand

nine hundred and eighteen, and of the Independence of the United States the one hundred and forty-third.

[SEAL] WOODROW WILSON.

By the President:
ROBERT LANSING,
*Secretary of State.*

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**PLAINTIFF'S EXHIBIT No. 729-G.**

PROCLAMATION.

Whereas the act of Congress making appropriations to supply urgent deficiencies in appropriations for the fiscal year ending June 30, 1918, and prior fiscal years, on account of war expenses and for other purposes, approved March 28, 1918 (Public No. 109, Sixty-fifth Congress), contains the following provisions:

"The President is authorized to acquire the title to the docks, piers, warehouses, wharves, and terminal equipment and facilities on the Hudson River now owned by the North German Lloyd Dock Company and the Hamburg-American Line Terminal and Navigation Company, two corporations of the State of New Jersey, if he shall deem it necessary for the national security and defense: *Provided*, That if such property can not be procured by purchase, then the President is authorized and empowered to take over for the United States the immediate possession and title thereof. If any such property shall be taken over as aforesaid, the United States shall make just compensation therefor, to be determined by the President. Upon the taking over of said property by the President, as aforesaid, the title to all such property so taken over shall immediately vest in the United States:

*Provided further,* That section three hundred and fifty-five of the Revised Statutes of the United States shall not apply to any expenditures herein or hereafter authorized in connection with the property acquired."

And whereas, pursuant to the authority vested in the President by said act of Congress approved March 28, 1918, the President by a proclamation duly made on the 28th day of June, 1918, determined and declared that the acquisition of title to the foregoing docks, piers, warehouses, wharves, and terminal equipment and facilities was necessary for the national security and defense, and did thereby take over for the United States of America the immediate possession and title thereof, including all leaseholds, easements, rights of way, riparian rights and other rights, estates and interests therein or appurtenant thereto; a more particular description of which said property is set forth in the schedule marked A hereto annexed;

And whereas, pursuant to the authority vested in the President by said act of Congress approved March 28, 1918, it was in and by said proclamation of June 28, 1918, expressed and declared that just compensation for the property thereby taken over would be thereafter determined and paid;

Now, therefore, I, Woodrow Wilson, President of the United States of America, pursuant to the authority vested in me by the said act of Congress approved March 28, 1918, do hereby determine and declare that the just compensation for the property in and by said proclamation of June 28, 1918, expropriated for the United States of America in the sum of seven million, one hundred and forty-six thousand, five hundred eighty-three dollars ($7,146,583); and I do hereby order and direct that compensation for the same, aggregating said amount of $7,146,583, be made out of

the money appropriated by the act approved December 15, 1917, entitled "An act making appropriations to supply deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and eighteen, and for other purposes," continuing and making available until June thirtieth, nineteen hundred and eighteen, the appropriation of $100,000,000 "for the national security and defense, and for each and every purpose connected therewith, to be expended at the discretion of the President," contained in the general deficiency appropriation act approved April seventeenth, nineteen hundred and seventeen, to the parties and in the amounts set forth in the schedule marked A, hereto annexed; any part of this sum to be paid for which that appropriation does not suffice to be paid out of the similar appropriation for the fiscal year 1919;

And I do hereby further order, direct, and require under the authority delegated to me by section 6, subsection c, of the trading with the enemy act, approved October 6, 1917, that the sum of money specified in said schedule which I determined to be payable to the North German Lloyd, a corporation of the Free and Hanseatic City of Bremen in the German Empire, be paid over to the Alien Property Custodian appointed under the provisions of said trading with the enemy act, the same to be held by him subject to the provisions of said act.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the District of Columbia, this third day of December, in the year of our Lord one thousand nine hundred and eighteen, and of the Independence of the United States the one hundred and forty-third.

WOODROW WILSON.

By the President:

ROBERT LANSING, *Secretary of State.*

## PLAINTIFF'S EXHIBIT No. 729-H.

SCHEDULE A.

SCHEDULE OF COMPENSATION FOR THE DOCKS, PIERS, WAREHOUSES, WHARVES, AND TERMINAL EQUIPMENT AND FACILITIES EXPROPRIATED BY THE PROCLAMATION OF THE PRESIDENT OF JUNE 28, 1918, PURSUANT TO THE ACT OF CONGRESS APPROVED MARCH 28, 1918.

I. In respect to the following property:

All those certain pieces, parcels, or tracts of land and premises, part of which lie under water and part of which have been filled in and reclaimed, together with the buildings and improvements thereon, situate, lying, and being in the city of Hoboken, county of Hudson, and State of New Jersey, and bounded and described as follows: Beginning at a point in the northerly line of Newark Street 100 feet easterly from the northeasterly corner of Newark and River Streets, and running thence northerly and parallel with River Street 150 feet; thence westerly and parallel with Newark Street 100 feet to the easterly line of River Street; thence northerly along the easterly line or side of River Street 475 feet to a jog in the said easterly line; thence westerly and at right angles 5 feet to the easterly line or side of River Street continued; thence northerly and along the said easterly line or side of River Street 100 feet to the southerly line of property of the North German Lloyd; thence easterly parallel with Newark Street as the same would be if extended and along the southerly line of property of the North German Lloyd 522.92 feet more or less to the exterior line for solid filling established by the commissioners appointed under the authority of an

act of the legislature of the State of New Jersey, entitled "An act to ascertain the rights of the State and of the riparian owners in the lands lying under the waters of the Bay of New York and elsewhere in this State," approved April 11, A. D. 1864, and the supplements thereto; thence northeasterly along said exterior line for solid filling about 25.40 feet to a line distant 75.40 feet northerly at right angles from the northerly line of Second Street as the same would be if extended and to the southerly line of property conveyed by the party of the first part to the North German Lloyd by deed bearing date the 28th day of September, 1900, and recorded in the office of the register of Hudson County; thence southwesterly along said exterior line for solid filling about 779.55 feet more or less to a line parallel with and distant at right angles 25 feet southerly from the northerly line of Newark Street extended; thence westerly and parallel with Newark Street extended about 168.38 feet more or less to a point 348.20 feet easterly at right angles from the westerly line of River Street; thence northerly and parallel with River Street 25 feet to the northerly line or side of Newark Street and thence westerly along the northerly line or side of Newark Street 173.20 feet more or less to the point or place of beginning.

With the right, liberty, privilege, and franchise to exclude the tidewater from so much of the lands above described as lies under tidewater, by filling in or otherwise improving the same, and to appropriate the lands above described to exclusive use.

Also all the lands under water lying between the present exterior line for solid filling aforesaid and the exterior line for piers established by the authority of the State of New Jersey and bounded on the south by the southerly line of the above-described tract ex-

tended easterly to said exterior line for piers and on the north by a line 75.40 feet or thereabouts northerly of and parallel with the northerly line of Second Street extended easterly to said exterior line of piers, which northerly line is also the southerly line of lands conveyed to the North German Lloyd by deed dated September 28, 1900, recorded in the register's office in the County of Hudson.

With the right, liberty, privilege, and franchise of building piers only on so much of the land above described as lies between the exterior line for solid filling and the exterior line for piers as established by the authority of the State of New Jersey.

And if and when said exterior lines shall be fixed, or if said exterior lines have been heretofore fixed at any other points or places farther out into the Hudson River, also any and all lands under water lying between the present exterior line or lines above described and the new exterior line or lines that may be hereafter fixed, or that have been heretofore fixed, the same to be used for solid filling and for piers, respectively, agreeably to the terms of such extension.

To the Hamburg-American Line Terminal & Navigation Co., a corporation of the State of New Jersey, the sum of two million three hundred and fourteen thousand eight hundred and seventy-seven dollars ($2,314,877), to be paid to said Hamburg-American Line Terminal & Navigation Co., upon the satisfaction of record of all liens by way of mortgage, judgment, or otherwise existing on, and all taxes and assessments due and exigible upon the foregoing premises, or any part thereof, on the 28th day of June, 1918.

II. In respect of the following properties:

All those certain pieces, parcels, or tracts of land and premises, together with the buildings and im-

provements thereon, part of which lie under water, and part of which have been filled in and reclaimed, situate, lying, and being in the city of Hoboken, county of Hudson, and State of New Jersey, and bounded and described as follows:

Beginning at a point in the easterly line of River Street distant 50 feet northerly from the northerly line of Second Street extended, which point is the northwesterly corner of the property now owned or formerly belonging to the Hamburg-Americanische Packetfahrt Actien Gesellschaft, and running thence northerly along the easterly line of River Street 850.44 feet to the southerly line of Fourth Street; thence easterly along the southerly line of Fourth Street 850.44 feet to the southerly line of Fourth Street; thence northerly at right angles to Fourth Street extended about 6 feet to the face of a stone retaining wall; thence easterly and northeasterly along the face of said retaining wall about 130 feet to a point in the northerly line of Fourth Street extended about 230.75 feet easterly from the easterly line of River Street; thence easterly along the northerly line of Fourth Street if the same were extended to the exterior line for piers established February 17, 1913, by the commissioners or board thereunto authorized by the State of New Jersey; thence southerly along said exterior line for piers 876.54 feet and more to a line parallel to and distant 75.40 feet northerly from the northerly line of Second Street if the same were extended; thence westerly and parallel to Second Street if the same were extended to the exterior line for solid filling established by the commissioners appointed under the authority of an act of the legislature of the State of New Jersey, approved April 11, 1864, and the several supplements thereto and amendments thereof; thence southwesterly along said exterior line for solid

filling, about 25.40 feet to a point distant 50 feet northerly at right angles from the northerly line of Second Street extended; thence westerly and parallel to the northerly line of Second Street extended 522.92 feet, more or less, to the point or place of beginning.

With the right, liberty, privilege, and franchise to exclude the tidewater from so much of the lands above described as lies under tidewater, by filling in, or otherwise improving the same, and to appropriate the land above described to exclusive use except as hereinafter stated, and

With the right, liberty, privilege and franchise of building piers only on so much of the land above described as lies between the exterior line for solid filling and the exterior line for piers as established by the authority of the State of New Jersey.

And if, when said exterior lines shall be fixed, or if said exterior lines have been heretofore fixed, at any other points or places farther out into the Hudson River, also any and all lands under water lying between the present exterior lines above described and the new exterior line or lines that may hereafter be fixed, or that have been heretofore fixed, the same to be used for solid filling and for piers, respectively, agreeably to the terms of such extension.

All the rights, title, claims, privileges, and interest of North German Lloyd Dock Co. and interest of North German Lloyd in and to a parcel of land and land under waters of Hudson River, in the city of Hoboken, County of Hudson, and State of New Jersey, particularly described as follows:

Beginning at a point in the northerly line of Fourth Street if the same were extended 259.55 feet easterly from the easterly line of River Street and running thence northerly and parallel to River Street extended 100 feet; thence easterly and parallel to

Fourth Street extended 988.37 feet, more or less, to the exterior line for piers established by the riparian commissioners of New Jersey on October 28, 1897; thence southerly along said exterior line for piers 100.17 feet to the northerly line of Fourth Street if the same were extended; thence westerly along the northerly line of Fourth Street if the same were extended 982.55 feet, more or less, to the place of beginning; with the rights and privileges and subject to the limitations and restrictions incident to and affecting the said premises, as conveyed, transferred, and assigned to said North German Lloyd Dock Co. by deed dated March 1, 1901, recorded April 22, 1901, in Book 775, page 404, Conveyance Records of Hudson County, New Jersey; and also the rights, title, privileges, franchises, claims, and interest in and to the premises as above described, as conveyed to North German Lloyd Dock Co. by deed and agreement of the mayor and city council of Hoboken, dated May 23, 1901, recorded June 11, 1901, in Liber 784, page 156, Conveyance Records of Hudson County, New Jersey.

All of the rights, title, claims, privileges, and interest of the North German Lloyd Dock Co. in and to the parcel of land and land under waters of Hudson River, in the city of Hoboken, County of Hudson, and State of New Jersey, particularly described as follows:

Beginning at a point in the original high water line of the westerly shore of the Hudson River as said high-water line existed according to the loss map in 1804, where the same is intersected by a line 100 feet to the north at right angles from the northerly line of Fourth Street, and from thence running easterly parallel with the northerly line of Fourth Street, if the same were extended, and distant 100 feet northerly at right angles therefrom, 1,141.25 feet, more or

less, to the exterior line for piers adopted October 28, 1897, by the commissioners appointed under an act of New Jersey approved April 11, 1864, and supplements thereto; thence northerly along said exterior line for piers as adopted 50 feet, more or less, to a point 150 feet northerly at right angles to the northerly line of Fourth Street, if the same were extended; thence westerly parallel with northerly line of Fourth Street, if the same were extended, and distant 150 feet northerly at right angles therefrom 1,125.66 feet, more or less, to the high-water line of the westerly shore of the Hudson River as the same existed according to the loss map in 1804; thence southerly along said high-water line to the place of beginning; with the rights and privileges and subject to the limitations and restrictions incident to and affecting the said premises, as conveyed, transferred, and assigned to said North German Lloyd Dock Co. by deed dated November 11, 1908, recorded November 12, 1908, in Liber 1022, page 243, Conveyance Records of Hudson County, New Jersey; and rights, title, privileges, franchises, claims, and interest in and to a portion of the premises as conveyed to North German Lloyd Dock Co. by deed dated February 1, 1909, recorded February 3, 1909, Liber 1030, page 174, Conveyance Records of Hudson County, New Jersey.

To the North German Lloyd Dock Co., a corporation of the State of New Jersey, in respect of its reversion, the sum of one dollar ($1).

To the North German Lloyd, a corporation of the free and Hanseatic city of Bremen, in the German Empire, $4,831,705, less $47,500 interest, paid to the said Prudential Life Insurance Co. of America, on account of the obligation of said North German Lloyd, namely, four million seven hundred eighty-four thousand two hundred five dollars ($4,784,205), to be paid

to A. Mitchell Palmer, Alien Property Custodian, appointed under the provisions of the "trading with the enemy act," the same to be held by him subject to provisions of said act, as directed in the foregoing and annexed proclamation, said sum of $4,784,205 to be chargeable with the payment and satisfaction of all liens, by way of mortgage, judgment, or otherwise, existing on, and all taxes and assessments due and exigible on, the foregoing premises or any part thereof, on the 28th day of June, 1918.

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## PLAINTIFF'S EXHIBIT No. 730.

MESSAGE OF THE PRESIDENT TO CONGRESS, APRIL 2, 1917.
ADDRESS.

GENTLEMEN OF THE CONGRESS:

I have called the Congress into extraordinary session because there are serious, very serious, choices of policy to be made, and made immediately, which it was neither right nor constitutionally permissible that I should assume the responsibility of making.

On the third of February last I officially laid before you the extraordinary announcement of the Imperial German Government that on and after the first day of February it was its purpose to put aside all restraints of law or of humanity and use its submarines to sink every vessel that sought to approach either the ports of Great Britain and Ireland or the western coasts of Europe or any of the ports controlled by the enemies of Germany within the Mediterranean. That had seemed to be the object of the German submarine warfare earlier in the war, but since April of last year the Imperial Government had somewhat restrained the commanders of its undersea craft

in conformity with its promise then given to us that passenger boats should not be sunk and that due warning would be given to all other vessels which its submarines might seek to destroy, when no resistance was offered or escape attempted, and care taken that their crews were given at least a fair chance to save their lives in their open boats. The precautions taken were meagre and haphazard enough, as was proved in distressing instance after instance in the progress of the cruel and unmanly business, but a certain degree of restraint was observed. The new policy has swept every restriction aside. Vessels of every kind, whatever their flag, their character, their cargo, their destination, their errand, have been ruthlessly sent to the bottom without warning and without thought of help or mercy for those on board, the vessels of friendly neutrals along with those of belligerents. Even hospital ships and ships carrying relief to the sorely bereaved and stricken people of Belgium, though the latter were provided with safe conduct through the proscribed areas by the German Government itself and were distinguished by unmistakable marks of identity, have been sunk with the same reckless lack of compassion or of principle.

I was for a little while unable to believe that such things would in fact be done by any government that had hitherto subscribed to the humane practices of civilized nations. International law had its origin in the attempt to set up some law which would be respected and observed upon the seas, where no nation had right of dominion and where lay the free highways of the world. By painful stage after stage has that law been built up, with meagre enough results, indeed, after all was accomplished that could be accomplished, but always with a clear view, at least, of what the heart and conscience of mankind de-

manded. This minimum of right the German Government has swept aside under the plea of retaliation and necessity and because it had no weapons which it could use at sea except these which it is impossible to employ as it is employing them without throwing to the winds all scruples of humanity or of respect for the understandings that were supposed to underlie the intercourse of the world. I am not now thinking of the loss of property involved, immense and serious as that is, but only of the wanton and wholesale destruction of the lives of non-combatants, men, women, and children, engaged in pursuits which have always, even in the darkest periods of modern history, been deemed innocent and legitimate. Property can be paid for; the lives of peaceful and innocent people cannot be. The present German submarine warfare against commerce is a warfare against mankind.

It is a war against all nations. American ships have been sunk, American lives taken, in ways which it has stirred us very deeply to learn of, but the ships of people of other neutral and friendly nations have been sunk and overwhelmed in the waters in the same way. There has been no discrimination. The challenge is to all mankind. Each nation must decide for itself how it will meet it. The choice we make for ourselves must be made with a moderation of counsel and a temperateness of judgment befitting our character and our motives as a nation. We must put excited feeling away. Our motive will not be revenge or the victorious assertion of the physical might of the nation, but only the vindication of right, of human right, of which we are only a single champion.

When I addressed the Congress on the twenty-sixth of February last I thought that it would suffice to assert our neutral rights with arms, our right to use the seas against unlawful interference, our right

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to keep our people safe against unlawful violence. But armed neutrality, it now appears, is impracticable. Because submarines are in effect outlaws when used as the German submarines have been used against merchant shipping, it is impossible to defend ships against their attacks as the law of nations has assumed that merchantmen would defend themselves against privateers or cruisers, visible craft giving chase upon the open sea. It is common prudence in such circumstances, grim necessity indeed, to endeavour to destroy them before they have shown their own intention. They must be dealt with upon sight, if dealt with at all. The German Government denies the right of neutrals to use arms at all within the areas of the sea which it has proscribed, even in the defense of rights which no modern publicist has ever before questioned their right to defend. The intimation is conveyed that the armed guards which we have placed on our merchant ships will be treated as beyond the pale of law and subject to be dealt with as pirates would be. Armed neutrality is ineffectual enough at best; in such circumstances and in the face of such pretensions it is worse than ineffectual: it is likely only to produce what it was meant to prevent; it is practically certain to draw us into the war without either the rights or the effectiveness of belligerents. There is one choice we cannot make, we are incapable of making: we will not choose the path of submission and suffer the most sacred rights of our nation and our people to be ignored or violated. The wrongs against which we now array ourselves are no common wrongs; they cut to the very roots of human life.

With a profound sense of the solemn and even tragical character of the step I am taking and of the grave responsibilities which it involves, but in unhesitating obedience to what I deem my constitutional

duty, I advise that the Congress declare the recent course of the Imperial German Government to be in fact nothing less than war against the government and people of the United States; that it formally accept the status of belligerent which has thus been thrust upon it; and that it take immediate steps not only to put the country in a more thorough state of defense but also to exert all its power and employ all its resources to bring the Government of the German Empire to terms and end the war.

What this will involve is clear. It will involve the utmost practicable cooperation in counsel and action with the governments now at war with Germany, and, as incident to that, the extension to those governments of the most liberal financial credits, in order that our resources may so far as possible be added to theirs. It will involve the organization and mobilization of all the material resources of the country to supply the materials of war and serve the incidental needs of the nation in the most abundant and yet the most economical and efficient way possible. It will involve the immediate full equipment of the navy in all respects but particularly in supplying it with the best means of dealing with the enemy's submarines. It will involve the immediate addition to the armed forces of the United States already provided for by law in case of war at least five hundred thousand men, who should, in my opinion, be chosen upon the principle of universal liability to service, and also the authorization of subsequent additional increments of equal force so soon as they may be needed and can be handled in training. It will involve also, of course, the granting of adequate credits to the Government, sustained, I hope, so far as they can equitably be sustained by the present generation, by well conceived taxation.

I say sustained so far as may be equitable by tax-

ation because it seems to me that it would be most unwise to base the credits which will now be necessary entirely on money borrowed. It is our duty, I most respectfully urge, to protect our people so far as we may against the very serious hardships and evils which would be likely to arise out of the inflation which would be produced by vast loans.

In carrying out the measures by which these things are to be accomplished we should keep constantly in mind the wisdom of interfering as little as possible in our own preparation and in the equipment of our own military forces with the duty,—for it will be a very practical duty,—of supplying the nations already at war with Germany with the materials which they can obtain only from us or by our assistance. They are in the field and we should help them in every way to be effective there.

I shall take the liberty of suggesting, through the several executive departments of the Government, for the consideration of your committees, measures for the accomplishment of the several objects I have mentioned. I hope that it will be your pleasure to deal with them as having been framed after very careful thought by the branch of the Government upon which the responsibility of conducting the war and safeguarding the nation will most directly fall.

While we do these things, these deeply momentous things, let us be very clear, and make very clear to all the world what our motives and our objects are. My own thought has not been driven from its habitual and normal course by the unhappy events of the last two months, and I do not believe that the thought of the nation has been altered or clouded by them. I have exactly the same things in mind now that I had in mind when I addressed the Senate on the twenty-second of January last; the same that I had in mind

when I addressed the Congress on the third of February and on the twenty-sixth of February. Our object now, as then, is to vindicate the principles of peace and justice in the life of the world as against selfish and autocratic power and to set up amongst the really free and self-governed peoples of the world such a concert of purpose and of action as will henceforth ensure the observance of those principles. Neutrality is no longer feasible or desirable where the peace of the world is involved and the freedom of its peoples, and the menace to that peace and freedom lies in the existence of autocratic governments backed by organized force which is controlled wholly by their will, not by the will of their people. We have seen the last of neutrality in such circumstances. We are at the beginning of an age in which it will be insisted that the same standards of conduct and of responsibility for wrong done shall be observed among nations and their governments that are observed among the individual citizens of civilized states.

We have no quarrel with the German people. We have no feeling towards them but one of sympathy and friendship. It was not upon their impulse that their government acted in entering this war. It was not with their previous knowledge or approval. It was a war determined upon as wars used to be determined upon in the old, unhappy days when peoples were nowhere consulted by their rulers and wars were provoked and waged in the interest of dynasties or of little groups of ambitious men who were accustomed to use their fellow men as pawns and tools. Self-governed nations do not fill their neighbour states with spies or set the course of intrigue to bring about some critical posture of affairs which will give them an opportunity to strike and make conquest. Such designs can be successfully worked out only under cover

and where no one has the right to ask questions. Cunningly contrived plans of deception or aggression, carried, it may be, from generation to generation, can be worked out and kept from the light only within the privacy of courts or behind the carefully guarded confidences of a narrow and privileged class. They are happily impossible where public opinion commands and insists upon full information concerning all the nation's affairs.

A steadfast concert for peace can never be maintained except by a partnership of democratic nations. No autocratic government could be trusted to keep faith within it or observe its covenants. It must be a league of honour, a partnership of opinion. Intrigue would eat its vitals away; the plottings of inner circles who could plan what they would and render account to no one would be a corruption seated at its very heart. Only free peoples can hold their purpose and their honour steady to a common end and prefer the interests of mankind to any narrow interest of their own.

Does not every American feel that assurance has been added to our hope for the future peace of the world by the wonderful and heartening things that have been happening within the last few weeks in Russia? Russia was known by those who knew it best to have been always in fact democratic at heart, in all the vital habits of her thought, in all the intimate relationships of her people that spoke their natural instinct, their habitual attitude towards life. The autocracy that crowned the summit of her political structure, long as it had stood and terrible as was the reality of its power, was not in fact Russian in origin, character, or purpose; and now it has been shaken off and the great, generous Russian people have been added in all their naive majesty and might to the

forces that are fighting for freedom in the world, for justice, and for peace. Here is a fit partner for a League of Honour.

One of the things that has served to convince us that the Prussian autocracy was not and could never be our friend is that from the very outset of the present war it has filled our unsuspecting communities and even our offices of government with spies and set criminal intrigues everywhere afoot against our national unity of counsel, our peace within and without, our industries and our commerce. Indeed it is now evident that its spies were here even before the war began; and it is unhappily not a matter of conjecture but a fact proved in our courts of justice that the intrigues which have more than once come perilously near to disturbing the peace and dislocating the industries of the country have been carried on at the instigation, with the support, and even under the personal direction of official agents of the Imperial Government accredited to the Government of the United States. Even in checking these things and trying to extirpate them we have sought to put the most generous interpretation possible upon them because we knew that their source lay, not in any hostile feeling or purpose of the German people towards us (who were, no doubt as ignorant of them as we ourselves were), but only in the selfish designs of a Government that did what it pleased and told its people nothing. But they have played their part in serving to convince us at last that that Government entertains no real friendship for us and means to act against our peace and security at its convenience. That it means to stir up enemies against us at our very doors the intercepted note to the German Minister at Mexico City is eloquent evidence.

We are accepting this challenge of hostile purpose because we know that in such a government, following such methods, we can never have a friend; and that in the presence of its organized power, always lying in wait to accomplish we know not what purpose, there can be no assured security for the democratic governments of the world. We are now about to accept gauge of battle with this natural foe to liberty and shall, if necessary, spend the whole force of the nation to check and nullify its pretensions and its power. We are glad, now that we see the facts with no veil of false pretence about them, to fight thus for the ultimate peace of the world and for the liberation of its peoples, the German peoples included: for the rights of nations great and small and the privilege of men everywhere to choose their way of life and of obedience. The world must be made safe for democracy. Its peace must be planted upon the tested foundations of political liberty. We have no selfish ends to serve. We desire no conquest, no dominion. We seek no indemnities for ourselves, no material compensation for the sacrifices we shall freely make. We are but one of the champions of the rights of mankind. We shall be satisfied when those rights have been made as secure as the faith and the freedom of nations can make them.

Just because we fight without rancour and without selfish object, seeking nothing for ourselves but what we shall wish to share with all free peoples, we shall, I feel confident, conduct our operations as belligerents without passion and ourselves observe with proud punctilio the principles of right and of fair play we profess to be fighting for.

I have said nothing of the governments allied with the Imperial Government of Germany because they have not made war upon us or challenged us to

defend our right and our honour. The Austro-Hungarian Government has, indeed, avowed its unqualified endorsement and acceptance of the reckless and lawless submarine warfare adopted now without disguise by the Imperial German Government, and it has therefore not been possible for this Government to receive Count Tarnowski, the Ambassador recently accredited to this Government by the Imperial and Royal Government of Austria-Hungary; but that Government has not actually engaged in warfare against citizens of the United States on the seas, and I take the liberty, for the present at least, of postponing a discussion of our relations with the authorities at Vienna. We enter this war only where we are clearly forced into it because there are no other means of defending our rights.

It will be all the easier for us to conduct ourselves as belligerents in a high spirit of right and fairness because we act without animus, not in enmity towards a people or with the desire to bring any injury or disadvantage upon them, but only in armed opposition to an irresponsible government which has thrown aside all considerations of humanity and of right and is running amuck. We are, let me say again, the sincere friends of the German people, and shall desire nothing so much as the early re-establishment of intimate relations of mutual advantage between us,—however hard it may be for them, for the time being, to believe that this is spoken from our hearts. We have borne with their present government through all these bitter months because of that friendship,—exercising a patience and forbearance which would otherwise have been impossible. We shall, happily, still have an opportunity to prove that friendship in our daily attitude and actions towards the millions of men and women of German birth and

native sympathy who live amongst us and share our life, and we shall be proud to prove it towards all who are in fact loyal to their neighbours and to the Government in the hour of test. They are, most of them, as true and loyal Americans as if they had never known any other fealty or allegiance. They will be prompt to stand with us in rebuking and restraining the few who may be of a different mind and purpose. If there should be disloyalty, it will be dealt with with a firm hand of stern repression; but, if it lifts its head at all, it will lift it only here and there and without countenance except from a lawless and malignant few.

It is a distressing and oppressive duty, Gentlemen of the Congress, which I have performed in thus addressing you. There are, it may be, many months of fiery trial and sacrifice ahead of us. It is a fearful thing to lead this great peaceful people into war, into the most terrible and disastrous of all wars, civilization itself seeming to be in the balance. But the right is more precious than peace, and we shall fight for the things which we have always carried nearest our hearts,—for democracy, for the right of those who submit to authority to have a voice in their own governments, for the rights and liberties of small nations, for a universal dominion of right by such a concert of free peoples as shall bring peace and safety to all nations and make the world itself at last free. To such a task we can dedicate our lives and our fortunes, everything that we are and everything that we have, with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principles that gave her birth and happiness and the peace which she has treasured. God helping her, she can do no other.

**PLAINTIFF'S EXHIBIT No. 730½.**

# ADDRESS

OF THE

# PRESIDENT OF THE UNITED STATES

DELIVERED AT A JOINT SESSION OF THE TWO HOUSES OF CONGRESS

DECEMBER 4, 1917

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ADDRESS.

DECEMBER 4, 1917.

GENTLEMEN OF THE CONGRESS: Eight months have elapsed since I last had the honour of addressing you. They have been months crowded with events of immense and grave significance for us. I shall not undertake to retail or even to summarize those events. The practical particulars of the part we have played in them will be laid before you in the reports of the Executive Departments. I shall discuss only our present outlook upon these vast affairs, our present duties, and the immediate means of accomplishing the objects we shall hold always in view.

I shall not go back to debate the causes of the war. The intolerable wrongs done and planned against us by the sinister masters of Germany have long since become too grossly obvious and odious to every true American to need to be rehearsed. But I shall ask you to consider again and with a very grave scrutiny our objectives and the measures by which we mean to attain them; for the purpose of discussion here in this place is action, and our action

must move straight towards definite ends. Our object is, of course, to win the war; and we shall not slacken or suffer ourselves to be diverted until it is won. But it is worth while asking and answering the question. When shall we consider the war won?

From one point of view it is not necessary to broach this fundamental matter. I do not doubt that the American people know what the war is about and what sort of an outcome they will regard as a realization of their purpose in it. As a nation we are united in spirit and intention. I pay little heed to those who tell me otherwise. I hear the voices of dissent,—who does not? I hear the criticism and the clamor of the noisily thoughtless and troublesome. I also see men here and there fling themselves in impotent disloyalty against the calm, indomitable power of the nation. I hear men debate peace who understand neither its nature nor the way in which we may attain it with uplifted eyes and unbroken spirits. But I know that none of these speaks for the nation. They do not touch the heart of anything. They may safely be left to strut their uneasy hour and be forgotten.

But from another point of view I believe that it is necessary to say plainly what we here at the seat of action consider the war to be for and what part we mean to play in the settlement of its searching issues. We are the spokesmen of the American people and they have a right to know whether their purpose is ours. They desire peace by the overcoming of evil, by the defeat once for all of the sinister forces that interrupt peace and render it impossible, and they wish to know how closely our thought runs with theirs and what action we propose. They are impatient with those who desire peace by any sort of compromise,—deeply and indignantly impatient,—but they will be equally impatient with us if we do not make it plain to them what our objectives are and

what we are planning for in seeking to make conquest of peace by arms.

I believe that I speak for them when I say two things: First, that this intolerable Thing of which the masters of Germany have shown us the ugly face, this menace of combined intrigue and force which we now see so clearly as the German power, a Thing without conscience or honour or capacity for covenanted peace, must be crushed and, if it be not utterly brought to an end, at least shut out from the friendly intercourse of the nations; and, second, that when this Thing and its power are indeed defeated and the time comes that we can discuss peace,—when the German people have spokesmen whose word we can believe and when those spokesmen are ready in the name of their people to accept the common judgment of the nations as to what shall henceforth be the bases of law and of covenant for the life of the world,—we shall be willing and glad to pay the full price for peace, and pay it ungrudgingly. We know what that price will be. It will be full, impartial justice,—justice done at every point and to every nation that the final settlement must affect, our enemies as well as our friends.

You catch, with me, the voices of humanity that are in the air. They grow daily more audible, more articulate, more persuasive, and they come from the hearts of men everywhere. They insist that the war shall not end in vindictive action of any kind; that no nation or people shall be robbed or punished because the irresponsible rulers of a single country have themselves done deep and abominable wrong. It is this thought that has been expresed in the formula 'No annexations, no contributions, no punitive indemnities.' Just because this crude formula expresses the instinctive judgment as to right of plain men every-

where it has been made diligent use of by the masters of German intrigue to lead the people of Russia astray —and the people of every other country their agents could reach, in order that a premature peace might be brought about before autocracy has been taught its final and convincing lesson, and the people of the world put in control of their own destinies.

But the fact that a wrong use has been made of a just idea is no reason why a right use should not be made of it. It ought to be brought under the patronage of its real friends. Let it be said again that autocracy must first be shown the utter futility of its claims to power or leadership in the modern world. It is impossible to apply any standard of justice so long as such forces are unchecked and undefeated as the present masters of Germany command. Not until that has been done can Right be set up as arbiter and peace-maker among the nations. But when that has been done,—as, God willing, it assuredly will be,—we shall at last be free to do an unprecedented thing, and this is the time to avow our purpose to do it. We shall be free to base peace on generosity and justice, to the exclusion of all selfish claims to advantage even on the part of the victors.

Let there be no misunderstanding. Our present and immediate task is to win the war, and nothing shall turn us aside from it until it is accomplished. Every power and resource we possess, whether of men, of money, or of materials, is being devoted and will continue to be devoted to that purpose until it is achieved. Those who desire to bring peace about before that purpose is achieved I counsel to carry their advice elsewhere. We will not entertain it. We shall regard the war as won only when the German people say to us, through properly accredited representatives, that they are ready to agree to a settlement based upon justice and the reparation of the wrongs

their rulers have done. They have done a wrong to Belgium which must be repaired. They have established a power over other lands and peoples than their own,—over the great Empire of Austria-Hungary, over hitherto free Balkan states, over Turkey, and within Asia,—which must be relinquished.

Germany's success by skill, by industry, by knowledge, by enterprise we did not grudge or oppose, but admired, rather. She had built up for herself a real empire of trade and influence, secured by the peace of the world. We were content to abide the rivalries of manufacture, science, and commerce that were involved for us in her success and stand or fall as we had or did not have the brains and the initiative to surpass her. But at the moment when she had conspicuously won her triumphs of peace she threw them away, to establish in their stead what the world will no longer permit to be established, military and political domination by arms, by which to oust where she could not excel the rivals she most feared and hated. The peace we make must remedy that wrong. It must deliver the once fair lands and happy peoples of Belgium and northern France from the Prussian conquest and the Prussian menace, but it must also deliver the peoples of Austria-Hungary, the peoples of the Balkans, and the peoples of Turkey, alike in Europe and in Asia, from the impudent and alien dominion of the Prussian military and commercial autocracy.

We owe it, however, to ourselves to say that we do not wish in any way to impair or to rearrange the Austro-Hungarian Empire. It is no affair of ours what they do with their own life, either industrially or politically. We do not purpose or desire to dictate to them in any way. We only desire to see that their affairs are left in their own hands, in all matters, great or small. We shall hope to secure for

the peoples of the Balkan peninsula and for the people of the Turkish Empire the right and opportunity to make their own lives safe, their own fortunes secure against oppression or injustice and from the dictation of foreign courts or parties.

And our attitude and purpose with regard to Germany herself are of a like kind. We intend no wrong against the German Empire, no interference with her internal affairs. We should deem either the one or the other absolutely unjustifiable, absolutely contrary to the principles we have professed to live by and to hold most sacred throughout our life as a nation.

The people of Germany are being told by the men whom they now permit to deceive them and to act as their masters that they are fighting for the very life and existence of their Empire, a war of desperate self-defense against deliberate aggression. Nothing could be more grossly or wantonly false, and we must seek by the utmost openness and candour as to our real aims to convince them of its falseness. We are in fact fighting for their emancipation from fear, along with our own,—from the fear as well as from the fact of unjust attack by neighbours or rivals or schemers after world empire. No one is threatening the existence or the independence or the peaceful enterprise of the German Empire.

The worst that can happen to the detriment of the German people is this, that if they should still, after the war is over, continue to be obliged to live under ambitious and intriguing masters interested to disturb the peace of the world, men or classes of men whom the other peoples of the world could not trust, it might be impossible to admit them to the partnership of nations which must henceforth guarantee the world's peace. That partnership must be a partnership of peoples, not a mere partnership of

governments. It might be impossible, also, in such untoward circumstances, to admit Germany to the free economic intercourse which must inevitably spring out of the other partnerships of a real peace. But there would be no aggression in that; and such a situation, inevitable because of distrust, would in the very nature of things sooner or later cure itself, by processes which would assuredly set in.

The wrongs, the very deep wrongs, committed in this war will have to be righted. That of course. But they cannot and must not be righted by the commission of similar wrongs against Germany and her allies. The world will not permit the commission of similar wrongs as a means of reparation and settlement. Statesmen must by this time have learned that the opinion of the world is everywhere wide awake and fully comprehends the issues involved. No representative of any self-governed nation will dare disregard it by attempting any such covenants of selfishness and compromise as were entered into at the Congress of Vienna. The thought of the plain people here and everywhere throughout the world, the people who enjoy no privilege and have very simple and unsophisticated standards of right and wrong, is the air all governments must henceforth breathe if they would live. It is in the full disclosing light of that thought that all policies must be conceived and executed in this midday hour of the world's life. German rulers have been able to upset the peace of the world only because the German people were not suffered under their tutelage to share the comradeship of the other peoples of the world either in thought or in purpose. They were allowed to have no opinion of their own which might be set up as a rule of conduct for those who exercised authority over them. But the congress that concludes this war will feel the full strength of the tides that run now in the hearts and consciences

of free men everywhere. Its conclusions will run with those tides.

All these things have been true from the very beginning of this stupendous war; and I can not help thinking that if they had been made plain at the very outset the sympathy and enthusiasm of the Russian people might have been once for all enlisted on the side of the Allies, suspicion and distrust swept away, and a real and lasting union of purpose effected. Had they believed these things at the very moment of their revolution and had they been confirmed in that belief since, the sad reverses which have recently marked the progress of their affairs towards an ordered and stable government of free men might have been avoided. The Russian people have been poisoned by the very same falsehoods that have kept the German people in the dark, and the poison has been administered by the very same hands. The only possible antidote is the truth. It can not be uttered too plainly or too often.

From every point of view, therefore, it has seemed to be my duty to speak these declarations of purpose, to add these specific interpretations to what I took the liberty of saying to the Senate in January. Our entrance into the war has not altered our attitude towards the settlement that must come when it is over. When I said in January that the nations of the world were entitled not only to free pathways upon the sea but also to assured and unmolested access to those pathways I was thinking, and I am thinking now, not of the smaller and weaker nations alone, which need our countenance and support, but also of the great and powerful nations, and of our present enemies as well as our present associates in the war. I was thinking, and am thinking now, of Austria herself, among the rest, as well as of Serbia and of Poland. Justice and equality of rights can be had

only at a great price. We are seeking permanent, not temporary, foundations for the peace of the world and must seek them candidly and fearlessly. As always, the right will prove to be the expedient.

What shall we do, then, to push this great war of freedom and justice to its righteous conclusion? We must clear away with a thorough hand all impediments to success and we must make every adjustment of law that will facilitate the full and free use of our whole capacity and force as a fighting unit.

One very embarrassing obstacle that stands in our way is that we are at war with Germany but not with her allies. I therefore very earnestly recommend that the Congress immediately declare the United States in a state of war with Austria-Hungary. Does it seem strange to you that this should be the conclusion of the argument I have just addressed to you? It is not. It is in fact the inevitable logic of what I have said. Austria-Hungary is for the time being not her own mistress but simply the vassal of the German Government. We must face the facts as they are and act upon them without sentiment in this stern business. The government of Austria-Hungary is not acting upon its own initiative or in response to the wishes and feelings of its own peoples but as the instrument of another nation. We must meet its force with our own and regard the Central Powers as but one. The war can be successfully conducted in no other way. The same logic would lead also to a declaration of war against Turkey and Bulgaria. They also are the tools of Germany. But they are mere tools and do not yet stand in the direct path of our necessary action. We shall go wherever the necessities of this war carry us, but it seems to me that we should go only where immediate and practical considerations lead us and not heed any others.

The financial and military measures which must

be adopted will suggest themselves as the war and its undertakings develop, but I will take the liberty of proposing to you certain other acts of legislation which seem to me to be needed for the support of the war and for the release of our whole force and energy.

It will be necessary to extend in certain particulars the legislation of the last session with regard to alien enemies; and also necessary, I believe, to create a very definite and particular control over the entrance and departure of all persons into and from the United States.

Legislation should be enacted defining as a criminal offense every wilful violation of the presidential proclamations relating to alien enemies promulgated under section 4067 of the Revised Statutes and providing appropriate punishments; and women as well as men should be included under the terms of the acts placing restraints upon alien enemies. It is likely that as time goes on many alien enemies will be willing to be fed and housed at the expense of the Government in the detention camps and it would be the purpose of the legislation I have suggested to confine offenders among them in penitentiaries and other similar institutions where they could be made to work as other criminals do.

Recent experience has convinced me that the Congress must go further in authorizing the Government to set limits to prices. The law of supply and demand, I am sorry to say, has been replaced by the law of unrestrained selfishness. While we have eliminated profiteering in several branches of industry it still runs impudently rampant in others. The farmers, for example, complain with a great deal of justice that, while the regulation of food prices restricts their incomes, no restraints are placed upon the prices of most of the things they must themselves

purchase; and similar inequities obtain on all sides.

It is imperatively necessary that the consideration of the full use of the water power of the country and also the consideration of the systematic and yet economical development of such of the natural resources of the country as are still under the control of the federal government should be immediately resumed and affirmatively and constructively dealt with at the earliest possible moment. The pressing need of such legislation is daily becoming more obvious.

The legislation proposed at the last session with regard to regulated combinations among our exporters, in order to provide for our foreign trade a more effective organization and method of cooperation, ought by all means to be completed at this session.

And I beg that the members of the House of Representatives will permit me to express the opinion that it will be impossible to deal in any but a very wasteful and extravagant fashion with the enormous appropriations of the public moneys which must continue to be made, if the war is to be properly sustained, unless the House will consent to return to its former practice of initiating and preparing all appropriation bills through a single committee, in order that responsibility may be centered, expenditures standardized and made uniform, and waste and duplication as much as possible avoided.

Additional legislation may also become necessary before the present Congress again adjourns in order to effect the most efficient coordination and operation of the railway and other transportation systems of the country; but to that I shall, if circumstances should demand, call the attention of the Congress upon another occasion.

If I have overlooked anything that ought to be done for the more effective conduct of the war, your

own counsels will supply the omission. What I am perfectly clear about is that in the present session of the Congress our whole attention and energy should be concentrated on the vigorous, rapid, and successful prosecution of the great task of winning the war.

We can do this with all the greater zeal and enthusiasm because we know that for us this is a war of high principle, debased by no selfish ambition of conquest or spoliation; because we know, and all the world knows, that we have been forced into it to save the very institutions we live under from corruption and destruction. The purposes of the Central Powers strike straight at the very heart of everything we believe in; their methods of warfare outrage every principle of humanity and of knightly honour; their intrigue has corrupted the very thought and spirit of many of our people; their sinister and secret diplomacy has sought to take our very territory away from us and disrupt the Union of the States. Our safety would be at an end, our honour forever sullied and brought into contempt were we to permit their triumph. They are striking at the very existence of democracy and liberty.

It is because it is for us a war of high, disinterested purpose, in which all the free peoples of the world are banded together for the vindication of right, a war for the preservation of our nation and of all that it has held dear of principle and of purpose, that we feel ourselves doubly constrained to propose for its outcome only that which is righteous and of irreproachable intention, for our foes as well as for our friends. The cause being just and holy, the settlement must be of like motive and quality. For this we can fight, but for nothing less noble or less worthy of our traditions. For this cause we entered the war and for this cause will we battle until the last gun is fired.

I have spoken plainly because this seems to me the time when it is most necessary to speak plainly, in order that all the world may know that even in the heat and ardour of the struggle and when our whole thought is of carrying the war through to its end we have not forgotten any ideal or principle for which the name of America has been held in honour among the nations and for which it has been our glory to contend in the great generations that went before us. A supreme moment of history has come. The eyes of the people have been opened and they see. The hand of God is laid upon the nations. He will show them favour, I devoutly believe, only if they rise to the clear heights of His own justice and mercy.

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**PLAINTIFF'S EXHIBIT No. 731.**

No. 1795.

UNITED STATES OF AMERICA

(Cut, Coat of Arms.)

DEPARTMENT OF STATE.

*To all to whom these presents shall come* GREETING:

I CERTIFY That the document hereto annexed is a true copy from the files and records of this Department.

IN TESTIMONY WHEREOF I, Charles E. Hughes, Secretary of State, have hereunto caused the Seal of the Department of State to (Seal) be affixed and my name subscribed by the Chief Clerk of the said Department, at the City of Washington, this twenty-ninth day of March, 1923.

CHARLES E. HUGHES,
*Secretary of State.*

By (Sgd.) BEN G. DAVIS,
*Chief Clerk.*

(Copy MEF/So)

To His Holiness,
Benedictus XV.,
Pope.

In acknowledgment of the communication of Your Holiness to the belligerent peoples, dated August 1, 1917, the President of the United States requests me to transmit the following reply:

Every heart that has not been blinded and hardened by this terrible war must be touched by this moving appeal of His Holiness the Pope, must feel the dignity and force of the humane and generous motives which prompted it, and must fervently wish that we might take the path of peace he so persuasively points out. But it would be folly to take it if it does not in fact lead to the goal he proposes. Our response must be based upon the stern facts and upon nothing else. It is not a mere cessation of arms he desires; it is a stable and enduring peace. This agony must not be gone through with again, and it must be a matter of very sober judgment what will insure us against it.

His Holiness in substance proposes that we return to the *status quo ante bellum*, and that then there be a general condonation, disarmament, and a concert of nations based upon an acceptance of the principle of arbitration; that by a similar concert freedom of the seas be established; and that the territorial claims of France and Italy, the perplexing problems of the Balkan states, and the restitution of Poland be left to such conciliatory adjustments as may be possible in the new temper of such a peace, due regard being paid to the aspirations of the peoples whose political fortunes and affiliations will be involved.

It is manifest that no part of this programme can be successfully carried out unless the restitution of the *status quo ante* furnishes a firm and satisfactory basis for it. The object of this war is to deliver the free

peoples of the world from the menace and the actual power of a vast military establishment controlled by an irresponsible government which, having secretly planned to dominate the world, proceeded to carry the plan out without regard either to the sacred obligations of treaty or the long established practices and long cherished principles of international action and honor; which chose its own time for the war; delivered its blow fiercely and suddenly; stopped at no barrier either of law or of mercy; swept a whole continent within the tide of blood—not the blood of soldiers only, but the blood of innocent women and children also and of the helpless poor; and now stands balked but not defeated, the enemy of four-fifths of the world. This power is not the German people. It is the ruthless master of the German people. It is no business of ours how that great people came under its control or submitted with temporary zest to the domination of its purpose; but it is our business to see to it that the history of the rest of the world is no longer left to its handling.

To deal with such a power by way of peace upon the plan proposed by His Holiness the Pope would, so far as we can see, involve a recuperation of its strength and a renewal of its policy; would make it necessary to create a permanent hostile combination of nations against the German people, who are its instruments; and would result in abandoning the new-born Russia to the intrigue, the manifold subtle interference, and the certain counter-revolution which would be attempted by all the malign influences to which the German Government has of late accustomed the world. Can peace be based upon a restitution of its power or upon any word of honor it could pledge in a treaty of settlement and accommodation?

Responsible statesmen must now everywhere see, if they never saw before, that no peace can rest securely

upon political or economic restrictions meant to benefit some nations and cripple or embarrass others, upon vindictive action of any sort, or any kind of revenge or deliberate injury. The American people have suffered intolerable wrongs at the hands of the Imperial German Government, but they desire no reprisal upon the German people, who have themselves suffered all things in this war, which they did not choose. They believe that peace should rest upon the rights of peoples, not the rights of governments—the rights of peoples great or small, weak or powerful—their *equal* right to freedom and security and self-government and to a participation upon fair terms in the economic opportunities of the world—the German people of course included, if they will accept equality and not seek domination.

The test, therefore, of every plan of peace is this: Is it based upon the faith of all the peoples involved or merely upon the word of an ambitious and intriguing government, on the one hand, and of a group of free peoples, on the other? This is a test which goes to the root of the matter; and it is the test which must be applied.

The purposes of the United States in this war are known to the whole world—to every people to whom the truth has been permitted to come. They do not need to be stated again. We seek no material advantage of any kind. We believe that the intolerable wrongs done in this war by the furious and brutal power of the Imperial German Government ought to be repaired, but not at the expense of the sovereignty of any people—rather in vindication of the sovereignty both of those that are weak and of those that are strong. Punitive damages, the dismemberment of empires, the establishment of selfish and exclusive economic leagues, we deem inexpedient and in the end worse than futile, no proper basis for a peace of any

kind, least of all for an enduring peace. That must be based upon justice and fairness and the common rights of mankind.

We cannot take the word of the present rulers of Germany as a guarantee of anything that is to endure, unless explicitly supported by such conclusive evidences of the will and purpose of the German people themselves as the other peoples of the world would be justified in accepting. Without such guarantees treaties of settlement, agreements for disarmament, covenants to set up arbitration in the place of force, territorial adjustments, reconstitutions of small nations, if made with the German Government, no man, no nation could now depend on. We must await some new evidence of the purpose of the great peoples of the Central Empires. God grant it may be given soon and in a way to restore the confidence of all peoples everywhere in the faith of nations and the possibility of a covenanted peace.

R. L.

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**PLAINTIFF'S EXHIBIT No. 732.**

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November 20, 1919.

The Textile Alliance, Inc.,
45 East 17th Street,
New York, N. Y.

Dear Sirs:

The Chemical Foundation, Inc., being the owner of the letters patent enumerated in the attached schedule, hereby offers to license you to sell dyestuffs in the United States under said letters patent upon the following conditions:

1. The license shall extend only to the dyestuffs imported by you under the present State Department plan for the importation of a six months' supply of

vat dyes and only to dyestuffs imported under licenses from the War Trade Board Division of the State Department, or its sucessor.

2. You will report to The Chemical Foundation all importations of dyestuffs made by you, upon which dyestuffs The Chemical Foundation holds patents, as soon as such importations are made and shall report monthly to The Chemical Foundation all sales of such dyestuffs made under licenses and the net selling price received by you therefor.

3. You will within the first ten days of each month pay to The Chemical Foundation a royalty of ten per cent of the net selling price received by you for sales of dyestuffs under the license during the preceding month. The net selling price referred to herein includes freight, customs and handling charges and your commission, but does not include discounts.

4. The license may be terminated by thirty days' written notice in the event of a breach by either party of its terms.

Acceptance of this offer shall constitute a license according to its terms and no other or formal instrument will be necessary.

Very truly yours,

THE CHEMICAL FOUNDATION
INCORPORATED
By (Sgd.) DOUGLAS I. McKAY,
*Vice-President.*

Accepted November 20, 1919.
TEXTILE ALLIANCE, INC.
By B. R. PRIELL.

## PLAINTIFF'S EXHIBIT No. 732-A.

| Number | Date | Title |
|---|---|---|
| 955,105 | April 12, 1910 | Anthracene Dye and Process of making. |
| 919,572 | April 27, 1909 | Blue Sulphur Dye and Process of Making. |
| 931,598 | August 17, 1909 | Sulphur Dye and Process of Making same. |
| 837,840 | December 4, 1906 | Anthracene Dye and Process of Making. |
| 856,811 | June 11, 1907 | Dye of the Anthraquinone Series and Process of Making. |
| 955,105 | April 12, 1910 | Anthracene Dye and Process of Making. |
| 818,992 | April 24, 1906 | Anthracene Dye and Process of Making. |
| 796,393 | August 1, 1905 | Anthracene Coloring-Matter and Process of producing the same. |
| 906,367 | December 8, 1908 | Anthracene Dye and Process of Making. |
| 922,282 | May 18, 1909 | Anthracene Dye and Process of Making. |
| 925,917 | June 22, 1909 | Compound of the Anthracene Series and process of making |
| 814,137 | March 6, 1906 | Anthraquinon Compound and Process of making same. |
| 961,612 | June 14, 1910 | Anthracene Compound and Process of Making |
| 863,397 | August 13, 1907 | Anthraquinone Compound and Process of Making same. |
| 1,011,068 | December 5, 1911 | Vat Dye. |
| 958,325 | May 17, 1910 | Urea of the Anthraquinone Series and Process of Making same. |
| 682,523 | Sept. 10, 1901 | Blue Dye and Process of making same. |
| 970,878 | Sept. 20, 1910 | Vat Dye and Process of Making same. |
| 753,659 | March 1, 1904 | Anthracene Derivative and Process of Making same. |
| 739,579 | Sept. 22, 1903 | Blue Coloring Matter |
| 791,869 | June 6, 1905 | Brown Anthracene Dye |
| 767,259 | August 9, 1904 | Anthracene Dye |
| 739,145 | Sept. 15, 1903 | Anthracene Dye |
| 876,190 | Jan. 7, 1908 | Anthracene Dye and Process of Making. |
| 943,717 | December 21, 1909 | Brown Anthraquinone Dye and Process of Making Same. |
| 957,683 | May 10, 1910 | Dichlor-dibrom-indigo and Process of Making same. |
| 932,334 | August 24, 1909 | Brominated Beta-napthyl-indigo |
| 999,439 | August 1, 1911 | Vat-dyeing Coloring matter. |
| 1,025,174 | May 7, 1912 | Blue Vat Dyestuff and Process of making. |
| 968,697 | August 30, 1910 | Vat Dye and Process of Making same. |
| 892,897 | July 7, 1908 | Red Vat Dye |
| 819,348 | May 1, 1906 | Red Sulfur Dye and Process of Making |
| 850,827 | April 16, 1907 | Thio-indoxyl Derivative and Process of making same |
| 887,305 | October 1, 1907 | Vat-Dyestuff |

| Number | Date | Title |
|---|---|---|
| 872,585 | December 3, 1907 | Orange Vat-dye and Process of making same |
| 963,813 | July 12, 1910 | Red Halogenized Dye & Process of Making. |
| 867,305 | October 9, 1907 | Vat Dyestuff |
| 916,029 | March 23, 1909 | Red Violet Dye and Process of Making. |
| 1,025,138 | May 7, 1912 | Violet Blue Vat Dyestuffs. |
| 959,617 | May 31, 1910 | Vat Dye and Process of Making. |

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**PLAINTIFF'S EXHIBIT No. 732-B.**

(Copy)

December 9, 1919.

The Textile Alliance, Inc.
45 East 17th Street,
New York City.

Dear Sirs:

Referring to our license issued to you on November 20, 1919, under certain patents covering Vat Dyes, we hereby offer to add to the list of dyes under which you are licensed by said license, the following patents:

No. 961,048, Issued June 7, 1910—Anthraquinon-di-Acridenes

No. 965,170, Issued July 26, 1910—Process of condensing reduction products of Acenaphthene-quinone.

Upon your acceptance, the license of November 20th, 1919, shall extend to these patents under the same terms and conditions as stated in said license of November 20th.

Yours very truly,
THE CHEMICAL FOUNDATION INCORPORATED
(Sgd.) By DOUGLAS I. MCKAY,
*Vice-President.*

Accepted December 12, 1919.
THE TEXTILE ALLIANCE, INC.,
By BAYARD R. PRIELL,
*Actg. Secy.*

**PLAINTIFF'S EXHIBIT No. 732-C.**

Copy

THE CHEMICAL FOUNDATION
81 Fulton Street
New York City

December 9th, 1919.

The Textile Alliance, Inc.,
45 E. 17th St.,
New York City.

Dear Sirs:

The Chemical Foundation, Inc., being the owner of the letters patent enumerated in the attached schedule, hereby offers to license you to sell dyestuffs in the United States under said letters patent upon the following conditions:

1. The license shall extend only to dyestuffs imported by you under licenses from the WAR TRADE BOARD, Division of the State Department, or its successor, issued prior to January 1, 1920.

2. You will report to The Chemical Foundation all importations of dyestuffs made by you, upon which dyestuffs The Chemical Foundation holds patents, as soon as such importations are made and shall report monthly to The Chemical Foundation all sales of such dyestuffs made under licenses and the net selling price received by you therefor.

3. You will within the first ten days of each month pay to The Chemical Foundation a royalty of ten per cent. of the net selling price received by you for sales of dyestuffs under the license during the preceding month. The net selling price referred to herein includes freight, customs and handling charges and your commission, but does not include discounts.

4. The license may be terminated by thirty days'

written notice in the event of a breach by either party of its terms.

Acceptance of this offer shall constitute a license according to its terms and no other or formal instrument will be necessary.

Yours very truly,
THE CHEMICAL FOUNDATION INC.
(Sgd.) By DOUGLAS I. McKAY,
*Vice-President.*

Accepted December 12th, 1919
TEXTILE ALLIANCE, INC.,
(Sgd.) BAYARD R. PRIELL,
*Act. Secy.*

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## PLAINTIFF'S EXHIBIT No. 732-D.

**Key to the**
**NON-VAT DYES FOR WHICH CHEMICAL FOUNDATION HOLDS PATENTS.**

| Schultz No. | Patent No. | Name of Dye |
|---|---|---|
| 8 | 763756 | Pigment Chlorine G. G. paste |
| 28 | 731670 | Pigment Fast Yellow G |
| 152 | 741029 | Lithol Rubine B, BN powder |
| | | Permanent Red 4B paste |
| | | Permanent Red 4B extra powder |
| 153 | 733280 | Lake Red C paste |
| 179 | 858065 | Lake Bordeaux B paste |
| 181 | (770177) | Palatin Chrome Black 6B, 6BX |
| | (807422) | Salacine Black UL, U |
| | | Eriochrome Blue Black R |
| | | Acid Alizarine Blue Black A |
| | | Diamond Blue Black EB |
| | | Anthracene—Blue Black BE |
| | | Chrome Fast Black PW, PWBL, conc, PWRR |
| | | Blue au Chrome N |
| 200 | 878964 | Lake Red D paste |
| 202 | 757109 | Acid Alizarine Red B |

| Schultz No. | Patent No. | Name of Dye |
|---|---|---|
| | | Palatine Chrome Red B |
| | | Pigment Scarlet 3B |
| 384) | 888036 | Chicago Blue 2R |
| 420) | | Benzo Blue 3R |
| | | Diamine Blue C 2R |
| | | Azidine Wool Blue R |
| 462 | 717550 | Erie Direct Black GX |
| | | Renol Black R Extra |
| | | Patent Dianil Black EB conc. |
| | | Half Wool Black |
| | | Direct Deep Black EW extra |
| | | Cotton Black RW extra |
| 542 | 886815 | Agalma Green B |
| | | Immedial Orange C |
| | (764733) | |
| 727 | )764734( | Auronal Black B, 2B |
| | (764735) | |
| 731 | 778478 | Thiophor Indigo |
| 735 | 723154 | Pyrogene Indigo (V. M) |
| | | Immedial Naroon B |
| 781 | 826509 | Erweco Alizarine Acid Red BS |
| 857 | 996487 | Erweco Alizarine Acid Blue B |
| 867 | 876190 | Indanthrene Brown B |

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**NON-VAT DYES FOR WHICH CHEMICAL FOUNDATION HOLDS PATENTS.**

| Patent No. | Date | Title |
|---|---|---|
| 717550 | Jan. 6, 1903 | Process of making Black Polyaxo Dyes |
| 723154 | Mar. 17, 1903 | Sulphogene Indigo-blue—valuable as covering product |
| 731670 | June 23, 1903 | Yellow Monazo Dyestuff and process of making same |
| 733280 | July 7, 1903 | Red Azo Dye and process of making same |
| 741029 | Oct. 13, 1903 | Red Azo Lake |
| 757109 | Apr. 12, 1904 | Blue-Red Lake and process of making same |
| 763756 | June 28, 1904 | Process of reacting on Nitramins with Formaldehyde and a product thereof. |
| 764733 | July 12, 1904 | Black Sulfur Dye and process of making same |
| 764734 | July 12, 1904 | Direct Cotton Sulfur Dye and process of making same |
| 764735 | July 12, 1904 | Process of making Sulfur Dyes stable |
| 770177 | Sept. 13, 1904 | Azo Dye and process of making same |

| Patent No. | Date | Title |
|---|---|---|
| 778478 | Dec. 27, 1904 | Blue Sulfur Dye and process of making same |
| 807422 | Dec. 12, 1905 | Zinc Azonaphthol Dye and process of making same |
| 826509 | July 17, 1906 | Alizarine Sulfo-Acid and process of making same |
| 858065 | June 25, 1907 | Moncazo Dye for Lakes and process of making same |
| 876190 | Jan. 7, 1908 | Anthracene Dye and process of making same |
| 878964 | Feb. 11, 1908 | Red Color-Lake |
| 886815 | May 5, 1908 | Green Dye and process of making same |
| 888036 | May 19, 1908 | Blue Disazo Dye |
| 996487 | June 27, 1911 | Process of making Acid Dyes of the Anthracene Series |

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## PLAINTIFF'S EXHIBIT No. 733.

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LICENSE

THE CHEMICAL FOUNDATION, Inc.

to

ATMOSPHERIC NITROGEN CORPORATION,

Syracuse, New York.

*Dated* July 24, 1920 1920

*Product* Ammonia ($NH_3$ content), products and by-products therefrom.

| | | | | |
|---|---|---|---|---|
| *Patents* | 739,920 | 754,474 | 758,775 | 792,379 |
| | 797,961 | 797,962 | 804,021 | 814,917 |
| | 850,392 | 884,919 | 884,920 | 895,313 |
| | 911,801 | 918,589 | 922,003 | 923,012 |
| | 941,768 | 957,843 | 964,415 | 965,482 |
| | 970,883 | 971,149 | 971,206 | 971,501 |
| | 981,727 | 984,605 | 984,925 | 990,191 |
| | 993,144 | 994,095 | 999,025 | 1000,732 |
| | 1006,206 | 1008,927 | 1011,014 | 1015,566 |
| | 1015,800 | 1018,990 | 1022,351 | 1028,366 |
| | 1029,528 | 1035,873 | 1039,851 | 1039,852 |
| | 1040,218 | 1043,798 | 1053,951 | 1053,952 |

| | | | |
|---|---|---|---|
| 1054,901 | 1055,331 | 1058,653 | 1059,817 |
| 1059,818 | 1061,725 | 1068,966 | 1089,185 |
| 1068,967 | 1068,968 | 1068,969 | 1070,138 |
| 1073,823 | 1073,870 | 1075,085 | 1077,034 |
| 1078,423 | 1078,686 | 1079,705 | 1083,585 |
| 1083,703 | 1090,874 | 1094,194 | 1096,392 |
| 1096,393 | 1098,139 | 1101,424 | 1102,716 |
| 1107,926 | 1109,447 | 1109,448 | 1113,096 |
| 1113,097 | 1115,249 | 1115,776 | 1118,595 |
| 1118,628 | 1119,534 | 1126,371 | 1128,804 |
| 1128,843 | 1129,559 | 1133,087 | 1134,416 |
| 1144,730 | 1148,570 | 1149,510 | 1152,196 |
| 1152,197 | 1152,930 | 1157,253 | 1158,167 |
| 1159,865 | 1169,817 | 1172,863 | 1172,908 |
| 1172,925 | 1173,532 | 1175,693 | 1178,440 |
| 1188,191 | 1200,805 | 1201,607 | 1202,995 |
| 1207,706 | 1207,707 | 1207,708 | 1211,181 |
| 1211,394 | 1212,504 | 1215,957 | 1216,059 |
| 1225,263 | 1225,264 | 1225,755 | 1243,382 |
| 1244,580 | 1256,875 | 1261,900 | 1278,580 |
| 1286,650 | 1301,151 | 1322,291 | 1330,772 |

And all other applications or patents for the production of ammonia, products, or by-products therefrom or materials or processes suitable for use therein, which may be owned or may hereafter be acquired by The Chemical Foundation. However, it is mutually understood and agreed that any product and/or by-product containing ammonia, which product and/or by-product is covered by a patent or pending application for a patent in the hands of The Foundation, is expressly excluded from the operation of this license, provided such product and/or by-product has a market value per unit of weight equivalent to or greater than double the market value of the same unit of weight of ammonia in the form of ammonia liquor on $NH_3$ basis. By excluding such product and/or by-

product from the operation of this license, The Foundation waives none of its right, title, and interest therein.

OK DJW

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LICENSE.

AGREEMENT made this 24th day of July 1920, between THE CHEMICAL FOUNDATION, INC., a corporation organized under the laws of the State of Delaware (hereinafter called the LICENSOR) and ATMOSPHERIC NITROGEN CORPORATION, a corporation organized under the laws of New York (hereinafter called the LICENSEE).

WHEREAS, the LICENSOR is the owner of, or has the right to grant licenses under certain letters patent of the United States enumerated in Schedule A hereto attached (hereinafter called the LICENSED PATENTS); and

WHEREAS, the LICENSEE is desirous of obtaining a non-exclusive license under the LICENSED PATENTS upon the terms and conditions hereinafter set forth;

NOW, THEREFORE, in consideration of the premises and the faithful performance of the covenants herein contained, IT IS AGREED:

1.—The LICENSOR hereby grants to the LICENSEE upon the terms and conditions hereinafter specified, a personal, non-exclusive and (except as hereinafter provided) non-assignable license to make, use and sell throughout the United States, its territories and dependencies, Ammonia ($NH_3$ content), products and by-products therefrom (hereinafter called the LICENSED PRODUCT) under the LICENSED PATENTS to the full end of the terms for which the LICENSED PATENTS are issued, unless sooner terminated as hereinafter provided.

2.—Where product patents are included in Schedule A the LICENSEE shall not, without the written per-

mission of the LICENSOR, import into the United States, its territories or dependencies any product which is covered by any of said patents or sell in the United States, its territories or dependencies any such product made outside of the United States.

3.—The LICENSOR agrees to furnish, so far as is reasonably possible, upon request of the LICENSEE, such engineering data, copies of drawings, formulae, or other information as it now has or may hereafter acquire with respect to the LICENSED PATENTS for the assistance of the LICENSEE in making or using the inventions of the LICENSED PATENTS upon payment by the LICENSEE of the actual cost of furnishing such engineering data, copies of drawings, formulae, or other information. The LICENSOR shall not disclose confidential information which it has received from the LICENSEE or others and shall be in no way responsible or liable for the accuracy, correctness or sufficiency of any such data, drawings, formulae, or other information furnished hereunder. The LICENSOR shall upon request of the LICENSEE inform the LICENSEE of all licenses granted by it to other licensees under any of the patents of Schedule A.

4.—The LICENSOR will at its own expense bring and diligently prosecute such suits for infringement of the LICENSED PATENTS, as may be reasonably necessary and proper in the opinion of its counsel to enforce said patents and prevent unlicensed competition by manufacture, use or sale in the United States, and will at its own expense defend any suit brought against the LICENSEE by any person claiming title to the LICENSED PATENTS or any of them and hold the LICENSEE harmless in such suits to the extent of the royalties paid by the LICENSEE under this license.

5.—The LICENSOR agrees that should it hereafter establish any more favorable rate of royalty for the manufacture, use, and/or sale of the LICENSED PROD-

UCT than that charged herein it will give the LICENSEE the benefit of such more favorable rate from and after the date it is established.

6.—For the rights and licenses hereby granted the LICENSEE will pay to the LICENSOR, in the manner hereinafter provided $2500.—payable in advance on date of issue of license in lieu of royalties during a trial period of one year from date of completion of plant, plus an additional three months depending upon the time lost, if any, following completion of construction by reason of breakdowns and serious interruptions to initial operations; thereafter, the LICENSEE will pay to the LICENSOR, a royalty computed as follows: 2% of the net selling price received by the LICENSEE for concentrated ammonia liquors, and if ammonia produced under this license is sold in other forms than concentrated ammonia liquor or is used by the licensee in the manufacture of other products, the LICENSEE shall pay a royalty of 2% upon the ammonia content of such product or upon the ammonia used in the manufacture of such product, the value of said ammonia being computed on the average net selling price of ammonia as concentrated ammonia liquor in the trade at the time of such use. These royalties are to be paid to the end of the term of the Letters Patent enumerated in Schedule A.

7.—The LICENSEE will keep full, true and accurate books of account containing such particulars as may be required by the LICENSOR from time to time, of its operations under this license, which books and the premises where such licensed business is carried on, insofar as it may be necessary to determine the nature and extent of the LICENSEE's operations under this license, shall be open to the inspection of the LICENSOR or its representatives at all reasonable times.

8.—The LICENSEE within thirty days after Jan-

uary first, April first, July first and October first of each year, shall furnish the LICENSOR a true and accurate report, under oath if required, giving such particulars of the business conducted by the LICENSEE during the preceding three months under this license as may from time to time be required by the LICENSOR and as are pertinent to an accounting under this license and simultaneously with the making of each such report shall pay to the LICENSOR the royalty shown to be due thereby for the period covered by such report.

With specific reference to paragraph seven and eight of the license, the licensor expressly disclaims the right to solicit or secure information regarded by the license as confidential and relating to processes of manufacture or the use therein of secret ingredients, manufacturing agents, or apparatus, so long as the prescribed royalty is paid as stipulated in the license. But, in the event that during the life of this license payment of royalties when due is not made or is refused upon the claim that by reason of non-use of the patents, whether wholly or in part, such royalties are not payable, The Chemical Foundation reserves in that case only, the right of inspection to determine the accuracy of the claim.

9.—The LICENSEE by taking this license does not admit, except as between itself and the LICENSOR personally the patentability, novelty and utility of the inventions of the LICENSED PATENTS and the right or title of the LICENSOR thereto and the respective rights of the LICENSEE and third parties as between themselves shall remain unaffected thereby.

10.—If required by the LICENSOR, the LICENSEE shall, whenever practicable, mark the LICENSED PRODUCT, if subject to a product patent included in Schedule A and when intended for sale in the United States,

its territories and dependencies with the words "Licensed by THE CHEMICAL FOUNDATION, INC., under the following United States Letters Patent" followed by a list of the date or dates of issue of said product patent or patents, and when advertising the same in the United States, its territories and dependencies shall, if required by the LICENSOR, state in such advertisement that said product is licensed by the LICENSOR.

11.—The LICENSEE shall upon request of the LICENSOR furnish to the LICENSOR whenever practicable, samples of its product made under this license and shall, if required by the LICENSOR, indicate upon the labels carried by said product or, when that is not practicable, in another appropriate way, the grade, concentration and/or color, which qualities shall be expressed in terms of a scale of standards to be established by the LICENSOR. Where the LICENSED PRODUCT is one which may affect the public health or safety the LICENSOR reserves the right to prescribe the limits of purity and strength of the product to be sold and to prescribe tests to which said product shall be subjected.

12.—The LICENSEE shall not be liable for contributory infringement of patents owned by the LICENSOR by reason of the use of the LICENSED PRODUCT by others, nor shall the LICENSEE be deemed to have violated any of the provisions of this license by such infringing use by others. Where Schedule A includes patents which may be infringed by the use of the LICENSED PRODUCT, the LICENSEE may authorize its customers to use the said product under the LICENSED PATENTS.

13.—This license may be cancelled and terminated in the following manner:

The LICENSOR shall give written notice to the LI-

CENSEE of the proposed cancellation and termination assigning in said notice the cause for which it is proposed to cancel and terminate. If the LICENSEE shall so require within five days after receipt of said notice, the trustees of THE CHEMICAL FOUNDATION, INC. under the deed of trust dated May 1, 1919 between said trustees and Francis P. Garvan, Douglas I. McKay and George C. Corbett shall set a date for a hearing and give the LICENSEE written notice thereof. After hearing the LICENSEE, or upon its failure to appear at the place and date set for such hearing, the trustees shall make a determination in writing, a copy of which shall be furnished to the LICENSEE and which shall be conclusive, final and binding upon the LICENSEE and shall not be reviewable by a Court. If the LICENSEE shall fail to require a hearing or if the trustees shall determine that this license should be cancelled and terminated the LICENSOR may give the LICENSEE ninety (90) days' notice of termination and cancellation and at the end of said ninety days, this license shall cease and terminate. The LICENSEE may surrender this license upon ninety (90) days' written notice to the LICENSOR. The surrender or termination of this license shall in no way affect the liability of the LICENSEE for any sums of money accruing or becoming due or payable prior to the date of surrender or termination. Upon surrender or termination of this license by the LICENSEE royalties at the rate last paid or payable by the LICENSEE upon the LICENSED PRODUCT shall accrue and become immediately due and payable for all of the product manufactured and on hand, or in course of manufacture, or sold and payment for which has not yet been received.

And upon such surrender all obligations or admissions of the licensee under paragraphs 6 to 11 thereof, shall immediately cease and terminate.

14.—This license may be assigned by the LICENSEE as a part of a sale of its entire business, but the LICENSEE shall give the LICENSOR immediate notice of such sale.

15.—All written notices or permissions referred to herein shall be given by registered mail addressed to the last known address of the respective parties.

16.—This agreement shall be interpreted in accordance with the laws of the State of New York.

IN WITNESS WHEREOF, the parties have hereunto caused their respective corporate seals to be hereunto affixed and duly attested and these presents to be signed by their duly authorized officers, the day and year first above written.

THE CHEMICAL FOUNDATION, INC.
By (Sgd.) DOUGLAS I. McKAY,
*Vice President.*

Attest:
(Seal) (Sgd.) GEO. J. CORBETT,
*Secretary.*

(Sgd.) ATMOSPHERIC NITROGEN CORP.
By E. L. PIERCE
*President.*

Attest:
(Seal) (Sgd.) E. L. JONES,
*Secretary.*

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SCHEDULE A.

| Patent No. | Date of Issue | Subject |
|---|---|---|
| 739,920 | Sept. 29, 1903 | Apparatus for treating gases. |
| 754,474 | Mar. 15, 1904 | Process of making Nitrogen compounds from Atmospheric Nitrogen. |
| 758,775 | May 3, 1904 | Apparatus for treating gases. |
| 792,379 | June 13, 1905 | Ammonia-still. |
| 797,961 | Aug. 22, 1905 | Process of making Ammonia. |
| 797,962 | Aug. 22, 1905 | Process of making Ammonia. |

| Patent No. | Date of Issue | Subject |
|---|---|---|
| 804,021 | Nov. 7, 1905 | Means for producing oxids of nitrogen. |
| 814,917 | Mar. 13, 1906 | Process of making Nitric Acid from air. |
| 850,392 | Apr. 16, 1907 | Process of Oxidizing Atmospheric Nitrogen. |
| 884,919 | Apr. 14, 1908 | Process for making Nitrogen Oxide from air. |
| 884,920 | Apr. 14, 1908 | Process for making Nitrogen Oxide from air. |
| 895,313 | Aug. 4, 1908 | Gas Purifier. |
| 911,801 | Feb. 9, 1909 | Gas Generator. |
| 918,589 | Apr. 20, 1909 | Apparatus for separating Nitrogen and Oxygen from Mixture containing them. |
| 922,003 | May 18, 1909 | Process of making Ammonia. |
| 923,012 | May 25, 1909 | Production of Cyanid and Cyanamid. |
| 941,768 | Nov. 30, 1909 | Electric Furnace for Gas reactions. |
| 957,843 | May 10, 1910 | Process of making Ammonia. |
| 964,415 | July 12, 1910 | Method of producing Hydrogen from Watergas. |
| 965,482 | July 26, 1910 | Process of manufacturing Gas for inflating Aerostats. |
| 970,883 | Sept. 20, 1910 | Process of obtaining Ammonia. |
| 971,149 | Sept. 27, 1910 | Catalytic body and method of making same. |
| 971,206 | Sept. 27, 1910 | Process of producing Hydrogen. |
| 971,501 | Sept. 27, 1910 | Production of Ammonia. |
| 981,727 | Jan. 17, 1911 | Means for Electric-arc reactions on gases. |
| 984,605 | Feb. 21, 1911 | Method of producing Nitrogen and Carbon Dioxid from Gaseous products of combustion. |
| 984,925 | Feb. 21, 1911 | Process of Oxidizing Nitrogen of Air by means of electric discharges. |
| 990,191 | Apr. 18, 1911 | Process of producing Ammonia. |
| 993,144 | May 23, 1911 | Process of producing Ammonia. |
| 994,095 | May 30, 1911 | Process of making Nitrogenous compounds. |
| 999,025 | July 25, 1911 | Process of making Ammonia. |
| 1,000,732 | Aug. 15, 1911 | Process of making Nitric Oxid. |
| 1,006,206 | Oct. 17, 1911 | Production of Ammonia. |
| 1,008,927 | Nov. 14, 1911 | Process of making Calcium Cyanamid. |
| 1,011,014 | Dec. 5, 1911 | Process of manufacturing Oxids of Nitrogen. |

| Patent No. | Date of Issue | Subject |
|---|---|---|
| 1,015,566 | Jan. 23, 1912 | Process of obtaining and separating Oxygen and Nitrogen from the Atmosphere. |
| 1,015,800 | Jan. 30, 1912 | Process for the manufacture of the Fatty Acids from their Esters. |
| 1,018,990 | Feb. 27, 1912 | Method of an apparatus for producing and utilizing disk-like Electric Arcs for effecting Gas reactions. |
| 1,022,351 | Apr. 2, 1912 | Process for producing Cyanids & Cyanamids. |
| 1,028,366 | June 4, 1912 | Apparatus for producing Hydrogen Gas. |
| 1,029,528 | June 11, 1912 | Process of absorbing Oxids of Nitrogen. |
| 1,035,873 | Aug. 20, 1912 | Process for producing Endothermic Gas reactions and apparatus therefor. |
| 1,039,851 | Oct. 1, 1912 | Method and apparatus for the carrying out of Gas Reactions by means of an Electric Arc. |
| 1,039,852 | Oct. 1, 1912 | Method and apparatus for carrying out Gas Reactions by the use of an Electric Arc. |
| 1,040,218 | Oct. 1, 1912 | Process of purifying Crude Gas. |
| 1,043,798 | Nov. 12, 1912 | Process of producing Ammonia and Aluminum compounds. |
| 1,053,951 | Feb. 18, 1913 | Process of making Ammonia. |
| 1,053,952 | Feb. 18, 1913 | Process of manufacturing Ammonia. |
| 1,054,901 | Mar. 4, 1913 | Compounds containing Silicon and Nitrogen and process of producing such compounds. |
| 1,055,331 | Mar. 11, 1913 | Apparatus for carrying out Gas reactions particularly for the production of Oxid of Nitrogen in the Electric Arc. |
| 1,058,653 | Apr. 8, 1913 | Process for carrying through Chemical Gas reactions by means of an enlarged electrical discharge. |
| 1,059,817 | Apr. 22, 1913 | Apparatus for the manufacture of Hydrogen. |
| 1,059,818 | Apr. 22, 1913 | Process for the manufacture of Hydrogen from Metals and Water. |
| 1,061,725 | May 13, 1913 | Process of producing Molybdenum Nitrid. |
| 1,068,966 | July 29, 1913 | Production of Ammonia and Catalytic agents for use therein. |

| Patent No. | Date of Issue | Subject |
|---|---|---|
| 1,068,967 | July 29, 1913 | Production of Ammonia and Catalytic agents for use therein. |
| 1,068,968 | July 29, 1913 | Production of Ammonia and Catalytic agents for use therein. |
| 1,068,969 | July 29, 1913 | Production of Ammonia and Catalytic agents for use therein. |
| 1,070,138 | Aug. 12, 1913 | Process for the preparation of Catalytic substances in a minutely divided state. |
| 1,073,823 | Sept. 23, 1913 | Device for Synthesizing gases. |
| 1,073,870 | Sept. 23, 1913 | Device for Synthesizing gases. |
| 1,075,085 | Oct. 7, 1913 | Working with Hydrogen under pressure. |
| 1,077,034 | Oct. 28, 1913 | Process of working with Hydrogen under pressure. |
| 1,078,423 | Nov. 11, 1913 | Apparatus for obtaining Nitrogen from the atmosphere. |
| 1,078,686 | Nov. 18, 1913 | Process for the production of Hydrogen. |
| 1,079,705 | Nov. 25, 1913 | Process for Synthetically preparing Ammonia and other compounds containing Nitrogen and Hydrogen. |
| 1,083,585 | Jan. 6, 1914 | Catalytic production of Ammonia. |
| 1,083,703 | Jan. 6, 1914 | Method of Producing Ammonia and Compounds of Ammonia. |
| 1,089,185 | Mar. 3, 1914 | Producing Ammonia. |
| 1,090,874 | Mar. 24, 1914 | Process of bringing Hydrogen or Hydrogen containing Gas mixtures to reaction and apparatus therefor. |
| 1,094,194 | Apr. 12, 1914 | Production of Ammonia. |
| 1,096,392 | May 12, 1914 | Process of producing Nitrogen simultaneously with Oxids of Nitrogen. |
| 1,096,393 | May 12, 1914 | Process of producing Nitrogen simultaneously with Oxids of Nitrogen. |
| 1,098,139 | May 26, 1914 | Production of mixtures of Nitrogen and Hydrogen suitable for the manufacture of Ammonia. |
| 1,101,424 | June 23, 1914 | Process of making Nitrogen compounds. |
| 1,102,716 | July 7, 1914 | Producing Hydrogen and apparatus therefor. |
| 1,107,926 | Aug. 18, 1914 | Process of producing Hydrogen. |
| 1,109,447 | Sept. 1, 1914 | Generation of Hydrogen by means of Iron. |

| Patent No. | Date of Issue | Subject |
|---|---|---|
| 1,109,448 | Sept. 1, 1914 | Manufacture of Hydrogen. |
| 1,113,096 | Oct. 6, 1914 | Process of producing Hydrogen. |
| 1,113,097 | Oct. 6, 1914 | Process of producing Hydrogen. |
| 1,115,249 | Oct. 27, 1914 | Means for the production of long continuous Electric arcs. |
| 1,115,776 | Nov. 3, 1914 | Producing Hydrogen. |
| 1,118,595 | Nov. 24, 1914 | Process of producing Hydrogen. |
| 1,118,628 | Nov. 24, 1914 | Producing Ammonia. |
| 1,119,534 | Dec. 1, 1914 | Method for the preparation of Ammonia from the elements. |
| 1,126,371 | Jan. 26, 1915 | Process of purifying Hydrogen Gas. |
| 1,128,804 | Feb. 16, 1915 | Process of producing Hydrogen. |
| 1,128,843 | Feb. 16, 1915 | Production of Ammonia. |
| 1,129,559 | Feb. 23, 1915 | Reducing and Oxidizing apparatus for generating Hydrogen from Iron ore and Steam. |
| 1,133,087 | Mar. 23, 1915 | Purification of Hydrogen. |
| 1,134,416 | Apr. 6, 1915 | Process of making Hydrogen. |
| 1,144,730 | June 29, 1915 | Process of producing Hydrogen. |
| 1,148,570 | Aug. 3, 1915 | Catalytic agent for use in producing ammonia. |
| 1,149,510 | Aug. 10, 1915 | Producing Ammonia. |
| 1,152,196 | Aug. 13, 1915 | Process of making Hydrogen. |
| 1,152,197 | Aug. 13, 1915 | Process of an apparatus for making Hydrogen. |
| 1,152,930 | Sept. 7, 1915 | Production of Ammonia. |
| 1,157,253 | Oct. 19, 1915 | Process for the manufacture of Ammonia from its elements. |
| 1,158,167 | Oct. 26, 1915 | Production of Ammonia. |
| 1,159,865 | Nov. 9, 1915 | Apparatus for effecting reaction of Hydrogen under pressure. |
| 1,169,817 | Feb. 1, 1916 | Method of carrying out gas reactions in an Electric Furnace. |
| 1,172,863 | Feb. 22, 1916 | Process for producing Nitrogen compounds. |
| 1,172,908 | Feb. 22, 1916 | Manufacture of Hydrogen. |
| 1,172,925 | Feb. 22, 1916 | Process of producing Hydrogen or Illuminating and Heating Gas. |
| 1,173,532 | Feb. 29, 1916 | Catalytic agents and process of making them. |
| 1,175,693 | Mar. 14, 1916 | Process of producing Tungsten. |
| 1,178,440 | Apr. 4, 1916 | Process for the manufacture of Nitric Acid or Nitrates from Nitrogen Oxids. |
| 1,188,191 | June 20, 1916 | Process of Liquefying Gas Mixtures and for separating the constituents. |

| Patent No. | Date of Issue | Subject |
|---|---|---|
| 1,200,805 | Oct. 10, 1916 | Process of producing Hydrogen. |
| 1,201,607 | Oct. 17, 1916 | Electric Furnace. |
| 1,202,995 | Oct. 31, 1916 | Production of Ammonia. |
| 1,207,706 | Dec. 12, 1916 | Manufacture of Oxids of Nitrogen. |
| 1,207,707 | Dec. 12, 1916 | Manufacture of Oxids of Nitrogen. |
| 1,207,708 | Dec. 12, 1916 | Manufacture of Oxids of Nitrogen. |
| 1,211,181 | Jan. 2, 1917 | Apparatus for the production of Nitrogen compounds. |
| 1,211,394 | Jan. 9, 1917 | Catalyzer. |
| 1,212,504 | Jan. 16, 1917 | Process of preparing Nitrogen compounds. |
| 1,215,957 | Feb. 13, 1917 | Apparatus for liquefying and separating gases. |
| 1,216,059 | Feb. 13, 1917 | Absorbing Ammonia & Apparatus therefor. |
| 1,225,263 | May 8, 1917 | Apparatus for producing Hydrogen. |
| 1,225,264 | May 8, 1917 | Process for producing Hydrogen. |
| 1,225,755 | May 15, 1917 | Catalytic production of Ammonia. |
| 1,243,382 | Oct. 16, 1917 | Producing Ammonia. |
| 1,244,580 | Oct. 30, 1917 | Producing Ammonia. |
| 1,256,875 | Feb. 19, 1918 | Process for producing Ammonia. |
| 1,261,900 | Apr. 9, 1918 | Purifying Ammonia. |
| 1,278,580 | Sept. 10, 1918 | Producing compounds containing Tungsten and Nitrogen. |
| 1,286,650 | Dec. 3, 1918 | Producing Hydrogen. |
| 1,301,151 | Apr. 22, 1919 | Producing Hydrogen. |
| 1,322,291 | Nov. 18, 1919 | Method of oxidizing Ammonia. |
| 1,330,772 | Feb. 10, 1920 | Producing Hydrogen. |

And all other applications or patents for the production of ammonia, products, or by-products therefrom or materials or processes suitable for use therein, which may be owned or may hereafter be acquired by The Chemical Foundation.

## PLAINTIFF'S EXHIBIT No. 734.

### STATEMENT FROM CHENEY BROTHERS. GERMAN COLORS USED DURING 1922.

**Acid**

| | |
|---|---|
| Cyanole Extra | 100 |
| *Acid Blue OO | 500 |
| *Brilliant Acid Blue V | 300 |
| Silk Blue BT5BOO | 389 |
| *Rose Induline 2B | 314 |
| | 1603 |

**Alizarine**

| | |
|---|---|
| Alizarine Sky Blue B | 834 |
| " Uranole 2B | 155 |
| " Astrole B | 97 |
| " Cyanine Green 3G | 691 |
| Acid Aliz. Grey G | 200 |
| Aliz. Rubinole R | 790 |
| " " GW | 100 |
| " Irisole R | 50 |
| | 2917 |

**Basic**

| | |
|---|---|
| Nile Blue BX | 425 |
| Diphene Blue R | 1728 |
| Rhodamine 6GEX | 22 |
| | 2175 |

*—these colors are now being substituted by American-made colors

**Direct**

| | |
|---|---|
| *Diamine Fast Blue FFB | 801 |
| *Benzo Fast Blue 4GL | 705 |
| Napthamine Fast Brown BL | 251 |
| Diamine Fast Orange EG | 171 |
| Diamine Fast Orange ER | 37 |
| Zambesi Brown 4R | 205 |
| Diamine Scarlet 3B | 448 |
| | 2618 |

**Vat**

| | |
|---|---|
| Indigo MLB6B Powder | 600 |
| Helindone Blue 3GN Powd. | 85 |
| Ind. Blue GC Powder | 27 |
| Helindone Brown G Powd. | 150 |
| Hel. Green G Powder | 44 |
| Ind. Olive G Powder | 4 |
| *Helindone Grey GT Powder | 200 |
| Helindone Orange R Powder | 258 |
| Ind. Gold Orange G Paste | 355 |
| Ind. Gold Orange RRT Paste | 100 |
| Ind. Claret B Ex. Paste | 185 |
| Ind. Red BN Ex. Paste | 4 |
| Hel. Red 3B Powd. | 25 |
| Algol Brill. Violet 2B Powd. | 170 |
| Thio Indigo Violet R Powd. | 50 |
| Anthraflavone GC Paste | 450 |
| | 2707 |

## PLAINTIFF'S EXHIBIT No. 734-A.

STATEMENT FROM CHENEY BROTHERS.
CHIEF COLORS OF AMERICAN MANUFACTURE PURCHASED IN 1922.

| American Name | Corresponding German Color in 1913 | Price 1922 | Price 1913 |
|---|---|---|---|
| Acid Colors | | | |
| Induline NT | Induline #2 | 0.85 | 0.46 |
| Indian Yellow | Azo Yellow | 1.08 | 0.35 |
| Orange Y | Orange #2 | 0.33 | 0.175 |
| Fast Red S | Fast Red A | 0.75 | 0.27 |
| Acid Blue R | Acid Violet 5B Ex. | 2.50 | 0.68 |
| Basic Colors | | | |
| Victoria Blue B | Victoria Blue B | 2.00 | 0.37 |
| Brilliant Green Crys. | Brilliant Green Crys. | 1.68 | 0.52 |
| Vic. Green Crys. | Malachite Green Crys. | 1.45 | 0.425 |
| Rhodamine B Ex. | Rhodamine B Ex. | 7.50 | 0.90 |
| Methyl Violet 4B | Methyl Violet 4B | 1.15 | 0.63 |
| Direct Colors | | | |
| Erie Black GXOO | Direct Jet Black | 0.35 | 0.22 |
| Direct Sky Blue | Dianil Blue 7B | 1.02 | 0.61 |
| Erie Fast Brown GR | Diamine Brown 3G | 0.81 | 0.50 |
| Chrysophenine Extr | Chrysophenine ES | 0.91 | 0.75 |
| Direct Yellow G | Dianil Direct Yellow S | 0.77 | 0.67 |

## PLAINTIFF'S EXHIBIT No. 734-B.

STATEMENT FROM CHENEY BROTHERS.
Dyestuffs Purchased from Germany in 1921.

| *Color* | *Average Price* 1921 | 1913 |
|---|---|---|
| Acid Alizarine Grey G | 3.55 | 1.10 |
| Alizarine Rubinole R | 6.00 | 1.80 |
| Alizarine Rubinole GW | 5.47 | 1.70 |
| Alizarine Sky Blue B | 5.20 | 2.35 |
| Anthraflavone GC Paste | 2.80 | . . . |
| Benzo Fast Black L | 2.71 | 0.55 |
| Benzo Fast Orange S. | 2.76 | 0.50 |

| *Color* | *Average Price* | |
|---|---|---|
| Benzo Fast Red 8BL | 2.75 | ... |
| (Benzo Fast Blue 4GL | 4.00 | ... |
| (Napthamine Fast Blue 4B | ... | 1.20 |
| Chinoline Yellow KT Ex. Conc. | 4.17 | 0.95 |
| Cyanole Extra | 3.07 | 1.00 |
| Diamine Fast Blue FFB | 2.36 | 0.75 |
| Diamine Fast Orange EG | 1.84 | ... |
| Diamine Fast Orange ER | 1.84 | ... |
| Diamine Scarlet 3B | 2.06 | ... |
| Diamine Scarlet HS | 3.30 | 0.65 |
| Diphene Blue R | 3.32 | 0.65 |
| Helindone Brown G Powder | 16.63 | 4.85 |
| Helindone Brown 2R Powder | 20.41 | 6.75 |
| Helindone Grey GT Powder | 1.10 | 1.40 |
| Helindone Pink BN Paste | 2.82 | 0.80 |
| Helindone Red 3B Powder | 20.00 | 3.50 |
| Indanthrene Gold Orange G Paste | 1.30 | 0.62 |
| Indigo MLB6B Powder | 5.28 | 5.39 |
| Napthamine Fast Brown BL | 2.25 | ... |
| Nile Blue BX | 7.45 | ... |
| Rhodamine 6G Ex. | 12.32 | 1.95 |
| Silk Blue BT5BOO | 8.68 | 1.65 |
| Thio Indigo Violet R Powder | 22.05 | ... |
| Zambezi Brown 4R | 2.56 | ... |

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## PLAINTIFF'S EXHIBIT No. 734-C.

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ADDITIONAL TESTIMONY FURNISHED BY
MR. FRANKLIN W. HOBBS, PRESIDENT,
ARLINGTON MILLS
78 Chauncy St.,
Boston, Mass.

CHROME BLUE BLACK GROUP, SCHULTZ, No. 181.

This dyestuff was not used by us before the war except in a mixture with other dyestuffs, namely, Salicine Alizarine Blue 2 B made by Kalle, the price of

which in 1914 was 65 cents. We bought some in April 1915 at $1.10. This mixture, I believe to be about two-thirds Chrome Blue Black and one-third Sulphon Acid Blue R. The Sulphon Acid Blue R was being sold at that time by Bayer for 60 cents. The price of the Blue Black itself we therefore did not know at that time.

We first bought this color from the National Ani line & Chemical Co. in March 1919 at $1.65.

SULPHON CYANINE 5R—SCHULTZ No. 257.

| | | |
|---|---|---|
| Jan. 1913 | Bayer | 30¢ |
| Jan. 1913 | Badische | 28¢ |
| Apr. 1913 | Rosentwist | 60¢ |
| June 1913 | Klipstein | 26¢ |
| Aug. 1914 | Badische | $1.00 |
| Jan. 1917 | National | 2.50 |
| Apr. 1917 | National | 2.75 |
| May 1918 | National | 2.15 |

SULPHON ACID BLUE GROUP—SCHULTZ No. 188.

| | | |
|---|---|---|
| Jan. 1913 | Bayer | 65¢ |
| Feb. 1913 | Bayer | 60¢ |
| Mar. 1914 | Bayer | 45¢ |
| Oct. 1916 | National | $2.75 |
| Jan. 1917 | National | 2.75 |
| Mar. 1918 | National | 2.25 |
| Apr. 1918 | National | 2.15 |
| Apr. 1919 | National | 1.90 |

DIAZO BLACK GROUP—SCHULTZ No. 333.

| | | |
|---|---|---|
| Jan. 1913 | Bayer | 28¢ |
| June 1913 | Cassella | 30¢ |
| Dec. 1913 | Cassella | 28¢ |
| Apr. 1914 | Bayer | 22¢ |
| Apr. 1915 | Cassella | 40¢ |
| Feb. 1918 | National | $3.25 |
| Dec. 1918 | National | 2.90 |

ALIZARINE YELLOW G G W TYPE—SCHULTZ No. 48

1913 Hoechst $2.25

This is the basis for all Khaki or O. D. colors and can be bought today from American manufacturers at 60 cents per pound.

(Sgd.) FRANKLIN W. HOBBS.

July 18, 1923.